ASSESSING THE SLEEP QUALITY AMONG THE FISHING COMMUNITIES OF KOLLAM DISTRICT, KERALA

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Declaration

I hereby declare that this dissertation titled “Assessing the sleep quality among the fishing communities of Kollam district, Kerala” is a bonafide record of my original research. It has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

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Certificate

Certified that the dissertation titled “Assessing the sleep quality among the fishing communities of Kollam district, Kerala” is a record of the research work undertaken by Dr. Vismaya Shajahan in partial fulfillment of the requirement for the award of the degree of “Master of Public Health” under my guidance and supervision.

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GLOSSARY OF ABBREVIATIONS

PSQI – Pittsburgh Sleep Quality Index

KSCADC - Kerala State Coastal Area Development Cooperation

NREM - Non-Rapid Eye Movement sleep

REM - Rapid Eye Movement sleep

MSLT - Multi Sleep Latency Test

MWT - Maintenance of Wakefulness Test

VAS - Visual Analog Scales

PROMs- Patient-Reported Outcome Measures

FOSQ - Functional Outcomes of Sleep Questionnaire

ASQ - Athens Sleep Questionnaire

BIS - Bergen Insomnia Scale

NCD – Non-communicable diseases

DM – Diabetes Mellitus

BP – Blood pressure

BMI – Body Mass Index

AIC – Akaike Information Criteria

SBP – Systolic blood pressure

DBP – diastolic blood pressure

BPL – Below poverty line

APL – Above poverty line

WHO – World Health Organization

FHC – Family Health Centre

ABSTRACT

Background: Sleep is an essential physiological process with many restorative functions. Sleep quality can be defined as an individual self-satisfaction with all aspects of sleep experiences. Reduced sleep quality can result in impaired physical and psychological health, which can have severe health consequences. Fishing communities are vulnerable to sleep-related issues due to their mode of work, living conditions, environmental factors, etc. Even though many studies were done among the night shift workers, very few were done among the fishing communities to assess their sleep quality. The present study was conducted to assess the prevalence of poor sleep quality and to identify the sociodemographic and clinical factors associated with poor quality of sleep among the fishing communities of Kollam district, Kerala.

Method: A community-based cross-sectional study was done by collecting data from 340 participants from the cluster random sampled fishing villages of Kollam district, Kerala. Sociodemographic and clinical details were collected using a self-designed questionnaire. The Pittsburgh Sleep Quality Index (PSQI) was used to assess the quality of sleep. Data was analyzed using the SPSS V.28 and R version 4.3.1.

Result: The prevalence of poor sleep quality among the fishing communities was 83.5%. The mean global PSQI score was 11.3± 4.4. Not having a spouse (adjusted OR: 3.3 (95% CI: 1.2-9.1)), low monthly household income (adjusted OR: 2.54 (95% CI: 1.29-5.02)), presence of any medical condition (adjusted OR: 2.14 (95% CI: 1.03-4.45)), being

overweight (adjusted OR: 3.01 (95% CI:1.61-5.65)) and increasing age (adjusted OR: 1.05 (95% CI: 1.004-1.08)) increased the odds of having poor quality of sleep.

Conclusion: The study contributes to a greater understanding of the sleep quality among the fishing communities and the factors associated with the quality of sleep. The findings from this study highlight the importance of such studies among the people engaged in night shift occupations for their livelihood.

CHAPTER 1

INTRODUCTION

1.1. Background:

Sleep is a critical physiological process for maintaining an individual's physical and psychological health (Patil, 2023). “Sleep is defined as an essential biological drive to the maintenance of health and is a state of lesser consciousness and decreased physical activity during which an organism slows down and repairs itself” (*Encyclopedia of children’s health*, 2023). Another definition of sleep is “Sleep is defined behaviorally as a reversible phase of inattention and intuitive detachment from, and inattention to one’s surroundings” (Das et al., 2020). Humans sleep one-third of their lives (Colten et al., 2006b). It is one of the basic physiological processes for human survival, which ensures restorative functions and helps maintain the body's circadian rhythm (Kohyama, 2021).

Importance of sleep:

Sleep is a universal need for all the higher life forms, including humans, and the absence of it can result in severe physiological consequences (Colten et al., 2006b). Adequate sleep is essential to maintain the human body's and mind's proper functioning (Pawar et al., 2023). The optimal stage of life, or “svastha”, can be achieved only when there is a balance between three pillars of life (right diet, right sleep, and right sexuality), and every ayurvedic treatment ensures the balance between the three (Jackson-Kinman, 2017). Sleep is an inherent biological function of an organism, governed by the body’s circadian rhythm (Sharma et al., 2014). Circadian rhythm is the sleep-wake pattern of our body over 24 hours a day. It helps the brain to respond to darkness and light. The circadian rhythm of our body triggers the production of hormones such as melatonin, which is released more during the night and helps us sleep. The hormone cortisol, which is released abundantly during the

daytime, enables us to remain awake (Silver, 2020). Usually, while sleeping, the body uses its energy to heal and repair the damage that happens to the body during the daytime. Sleep patterns and the hormones generated by our body are highly related; therefore, when sleep patterns are disturbed, they affect the hormones produced in the body and ultimately affect our health. Sleep is essential for maintaining the heart functions and circulation of the body. When we fall asleep, our body enters into the non-REM stage, where the sympathetic system loses control of the body, and the parasympathetic system gains it, as a result of which the function of the heart is reduced, and it does not function as hard as it does when we are awake, therefore the heart rate and the blood pressure are lowered during the night. When we are awake, the sympathetic system controls our body again, and there will be a sharp increase in the heart rate and blood pressure. Good quality sleep is necessary to maintain the circadian rhythm and cognitive performance, to maintain normal physiology, and to enhance memory (*NIH*, 2022). Good quality sleep is a crucial aspect that maintains a good quality of life. Consistently experiencing insufficient sleep can increase the likelihood of developing various chronic ailments, including coronary heart disease, obesity, hypertension, and stroke (*NIH*, 2022).

Sleep deprivation and too much sleep are both harmful to health. Excessive sleep is linked to various health issues such as type 2 diabetes mellitus, heart disease, obesity, depression, headache, and an elevated mortality risk (Parker, 2022). Epidemiological data says that those who habitually sleep for more than 10 hours at night are at a greater risk of death and other health conditions (Klerman et al., 2021). Therefore, optimal sleep is essential to maintain good health and well-being. Globally, insufficient sleep is prevalent across various age groups and is considered a public health epidemic, usually unrecognized, under-reported, and has a relatively high economic cost (Chattu et al., 2018). Sleep loss and sleep complaints are also associated with many conditions such as myocardial

infarction, stroke, etc. (Colten et al., 2006a) and is associated with seven of the top fifteen causes of death in the U.S., including cardiovascular disease, malignant neoplasm, cerebrovascular disease, accidents, diabetes, septicemia, and hypertension. The Centre for Disease Control and Prevention (CDC) reported findings from a study conducted in 2014, stating that 65% of adults have reported good sleep and recent research done in the US concluded that 83.6 million adults have reported having insufficient sleep duration (less than seven hours). It highly depends upon the long working hours, high level of alcohol consumption, obesity, depression, anxiety, current cigarette smoking, low educational level, etc. (Sleep Deprivation and Deficiency - How Sleep Affects Your Health | NHLBI, NIH, 2022). Deprivation in sleep in the present era is an important area of concern; literature suggests that people with long-term sleep deprivation may suffer from many problems, such as impaired cognitive functions, mood swings and frequent judgments, migraine, increased risk of diabetes mellitus, cancer, burnouts, obesity, and metabolism. Often, excess deprivation in sleep can lead to microsleep (sleeping in between, without being aware of it), which can lead to poor academic performance in school-going children, or it may lead to a risk of motor vehicle or other forms of accidents in adults. Not only this, insufficient sleep affects the immune system, mental health, tiredness, and fatigue, but it is also linked to conditions such as depression, suicide tendencies, or even risk-taking behaviors (Sleep Deprivation and Deficiency - How Sleep Affects Your Health | NHLBI, NIH, 2022). Even though insufficient sleep burdens society, it is usually unrecognized by society, especially by clinicians.

1.2. Review of literature:

The literature review was done through a broad search on PubMed, Google Scholar, the official website of Kerala State Coastal Area Development Cooperation, and the other documents cited in the text.

MeSH terms used: Sleep, Sleep Quality, Occupational group

Search terms used for Google Scholar: Sleep quality, Shift workers, Fishing communities

1.21. Sleep and its stages:

"Sleep is a normal, reversible, recurrent state of reduced responsiveness to an external stimulus that is accompanied by a complex and predictable change in physiology" (*science and technology*, 2024). "Sleep can also be defined as a complex neurobiological state characterized by closed eyes, behavioral quiescence, and perceptual disengagement from one's surroundings" (Hall, 2013).

Sleep is a complex process, and our body passes through different stages of sleep or sleep cycle before we wake up. Sleep can be generally classified into two categories: non-rapid eye movement (NREM) and rapid eye movement (REM) sleep (Colten et al., 2006b). Usually, while sleeping, our body passes through four to six sleep cycles, each lasting about 90 minutes on average (*Sleep Foundation*, 2021). Each sleep cycle consists of four distinct stages, with three stages falling within the non-rapid eye movement (non-REM) phase (N1 to N3), followed by progression to the rapid eye movement (REM) stage. Each stage has distinct characteristics, including brain wave patterns, eye movement, and muscle tone (Colten et al., 2006b). As we fall asleep, we first enter the N1 stage, a brief stage lasting five to seven minutes, followed by the N2 stage, lasting 10 to 25 minutes, and then N3, or deep sleep, lasting 20 to 40 minutes. After NREM, we enter REM sleep, characterized by

active brain activity despite closed eyes (*Sleep Foundation*, 2021). Deep sleep predominates in the first half of the night, while REM sleep increases in the latter half.

Sleep pattern changes considerably and continuously with age (Colten et al., 2006b). From infancy to advanced age, there is a considerable change in sleeping habits, the duration, and the time spent on each stage of sleep. Newborns and infants sleep about 16 to 18 hours daily, and the continuous sleep episode may last for two to four hours. The amount of sleep decreases as the child gets older. By five years of age, the average sleep time would be reduced to 11 hours (Colten et al., 2006b). There is a multifaceted and reciprocal connection between sleep and pubertal development. Sleep affects the physical, mental, and emotional growth of adolescents (Mathew et al., 2019). It has been observed that each night, adolescents require nine to ten hours of sleep (Colten et al., 2006b). Sleep continues to change with age across adulthood; the average sleeping hours for an adult range from seven to nine hours each night. Older adults have fewer sleeping hours, and their sleep is more disturbed, which may create a negative impact on the quality of life and contribute to the development of various long-term health conditions (Colten et al., 2006b).

1.22. Sleep quality and sleep quantity:

Sleep quality and quantity are the two fundamental components of sleep, of which sleep quantity is often measurable, and sleep quality is purely subjective (Kohyama, 2021). As sleep quality is purely subjective, it can vary from person to person. It can be identified if he/she does not feel fresh in the morning, and can be defined technically as when a man/woman is moving through all the stages of sleep and entering into the non-REM stage. If he/she had not addressed any incidence of intermediate waking or very low incidence of intermediate waking, but once they wake up, if they don't feel fresh, the quality of sleep

should be considered as poor (Kohyama, 2021). A study conducted by the Ministry of Health, Labor, and Welfare in Japan came up with the conclusion that for assessing sleep, sleep quality is considered a superior index over sleep quantity, and restfulness obtained during sleep is a useful index for evaluating the sleep quality (Kohyama, 2021). The quantity of sleep/ how many hours we sleep is really important to get a good quality sleep. However, with the increasing social and economic demands, sleep duration has decreased considerably (Chattu et al., 2018). A study conducted in Japan reported that sleep duration has decreased by 59 minutes over the past 50 years; apart from Japan, studies in the US, parts of Europe, Canada, and Asia have also reported similar findings (Kohyama, 2021). Sleep deprivation is an emerging problem irrespective of age, occupation, etc. Sleep duration differs by country; Asians have a shorter nocturnal sleep, whereas people from Europe and the UK have a long weekend sleep duration (Willoughby et al., 2023). Sleep deprivation was prevalent even among infants; the average sleep duration in infants (6-11 months) has reduced from 13 hours to 10 hours within 60 years (Kohyama, 2021); all these factors can ultimately affect the quality of sleep.

1.23. Tools to access the sleep disorders:

Sleep is fundamental to health. A sleep disorder can be described as a group of conditions that disturb the regular sleep pattern, affecting overall health, safety, and quality of life (Karna et al., 2024). Either it can be a symptom of a disease, or it may be an indicator of a future disease such as depression. Therefore, assessing sleep is essential to maintain overall health and well-being. Sleep assessment methods can be classified into objective (medical assistance) and subjective (self-assessment method). The objective method includes polysomnography, actinography, Home Sleep Apnea Testing (HSAT), Multi Sleep Latency Test (MSLT), and Maintenance of Wakefulness Test (MWT). Sleep diaries, sleep

questionnaires, Visual Analog Scales (VAS), sleep interviews, and Patient-Reported Outcome Measures (PROMs) are the subjective methods of assessing sleep (Ibáñez et al., 2018). Even though objective methods are exact and considered the gold standard to evaluate sleep disorders, they are not readily available due to their high cost, labor intensiveness, and need for expertise to execute these methods.

The self-assessment (subjective) method mainly consists of sleep questionnaires and sleep diaries. Some of the questionnaires commonly used to assess sleep disorders are the Pittsburgh Sleep Quality Index (PSQI), Functional Outcomes of Sleep Questionnaire (FOSQ), Athens Sleep Questionnaire (ASQ), Bergen Insomnia Scale(BIS), Subjective Sleep Quality Scale, STOP-BANG Questionnaire, etc. (Ibáñez et al., 2018). Different sleep questionnaires are used to assess various parameters. For example, sleep questionnaires such as PSQI, ASQ, and BIS are used to determine sleep quality, whereas FOSQ measures the concept of sleepiness, which may not be related to sleep quality. The main problem with the subjective method is its long duration in conducting the test, impractical nature, high chances of recall bias, and the lack of standardized data. However, these methods are cost-effective and can capture the participant's behavior (Fabbri et al., 2021). The subjective method is often used as a screening method to assess sleep disorders, as the tool is inexpensive, rapid, and easy to perform.

Among these sleep questionnaires for the subjective assessment of sleep disorders, PSQI is the most widely used sleep quality assessment tool in both clinical and non-clinical populations and is regarded as a recognized benchmark or gold standard for self-perceived sleep quality (Fabbri et al., 2021). The PSQI is a self-administered survey designed to evaluate sleep quality within one month (Buysse et al., 1989). It has 19 items in the

questionnaire, and it measures seven domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, daytime dysfunction, sleep disturbance, and the use of sleep medication. Out of the 19 items, four items have a free response, and the rest of the items use a four-point Likert scale response (Luyster et al., 2015). The sum of these seven domains obtains the sleep quality, and the score ranges from 0-21. A score exceeding five indicates poor sleep quality, whereas a score of five or lower indicates good sleep quality.

1.24. Studies on sleep disorders across the world:

Sleep disorder is an emerging problem worldwide irrespective of age, gender, occupation, educational status, and the number of chronic diseases (Tao et al., 2023). A study done in China from 2008 to 2018 suggests that the older population has poor sleep quality, and over the past ten years, the poor sleep quality has increased from one-third to nearly half (Tao et al., 2023). Insomnia is a prevalent sleep disorder that impacts sleep quality and ultimately affects an individual's mental and physical health (Insomnia - What Is Insomnia? | NHLBI, NIH, 2022). In most Western countries, a declining pattern is observed in the average length of sleep (sleeping time), and there is a high prevalence of insomnia and other sleep disturbances (Stranges et al., 2012). A study done on the Canadian population proved that the prevalence rate of insomnia is 24 percent, where older individuals have a high prevalence of insomnia (Sutton et al., 2001). Even though humans spend one-third of their lives asleep, they know little about it (Colten et al., 2006b). Nowadays, sleep-related issues can be noticed among school-going children, older adults, or blue-collared professionals and white-collared professionals. Earlier, lack of sleep was a problem, particularly among those who are more prone to disturbed sleep, such as shift workers, security officers, nurses, etc. Studies among the nurses working in a tertiary care hospital found that 15.8 percent of the nurses have shift work disorders due to their severe or chronic

sleep disturbances (Francy et al., 2019). Similarly, a study done among construction workers in South India suggests that the prevalence of poor sleep quality among study participants was 33.9 percent (Sathvik et al., 2022). A study done among physicians who perform the night shift found that they have an increased risk of health problems (Schlafer et al., 2014). But nowadays, sleep-related issues are noticed among people irrespective of their age. A study by George *et al.* assessing the quality of sleep in the elderly rural population in Kerala found that 72.4 percent of the respondents had poor sleep quality (George et al., 2018). Sleep-related issues are a rising problem among adolescents as well. According to a study conducted among adolescents in rural Puducherry, South India, the prevalence of poor sleep quality was about 2.5 percent (Sarveswaran et al., 2019). The study observed that children with inadequate sleep during adolescence had poor academic performance (Mathew et al., 2019). This, in turn, would result in low educational status among these children, leading to economic and health burdens in the future.

A study by Chen *et al.* among Singaporean adults found that poor sleep quality was associated with emotional exhaustion, low personal accomplishment, and depersonalization (Chen et al., 2023). From this study, the authors concluded that sleep quality is a more meaningful indicator of an individual's psychological and overall health than sleep quantity. A prospective cohort study done on Taiwan residents for 18 years reported that both sleep quality and sleep duration are independently linked to the risk of coronary heart disease in individuals aged 40 years and older (Lao et al., 2018). Sleep is considered a modifiable risk factor, so by making conscious efforts to correct our sleeping habits, we may reduce the disease and economic burden due to sleep problems (Lao et al., 2018). A study by Fathima *et al*. concluded that females exhibit a greater prevalence of inadequate sleep quality than males (Fatima et al., 2016). A similar observation was made

by Mathew *et al.*, where adolescent girls were more prone to sleep-related issues when compared to boys (Mathew et al., 2019). Based on a study in rural north India, the prevalence of sleep disorders among women was higher (35.6 %) than men (32.6%). The study further provides evidence that the participants with lower education have a comparatively higher prevalence of sleep disorders compared to those with higher education (Patil, 2023). Factors such as unstable income, job insecurity, and debts also contribute to poor sleep quality. Even the place where they sleep, the pain they have, or the stress they face can affect their sleep quality. A study conducted among the patients attending the outpatient department of the rural health center of a medical college hospital at Kancheepuram concluded that the participants had poor sleep quality (Ganesan et al., 2019). Sleep quality is determined by many factors, particularly environmental variables such as noise, pollution, and air quality (Patil, 2023). The sleep quality also varies by area of residence, and a difference has been observed in sleep quality between rural and urban areas. A study conducted in northern India, among the rural population, suggested 32.6 percent of the participants have sleep disorders (Patil, 2023); this may be because of the difference in their environment, work schedule, and lifestyle from people living in the cities (Patil, 2023).

1.25. Studies on sleep quality among fishing communities across the world:

Fishing communities have poor sleep quality when compared to the general population (Laraqui et al., 2022), with a study in northern Morocco among fishermen reporting chronic insomnia in 47 percent of the participants (Laraqui et al., 2022). Their extended working hours (more than 10 hours of work per day), heavy workloads, and congested or crowded workplaces can alter their metabolic cycles, such as lipid and glucose metabolism. To remain vigilant and attentive throughout extended work periods, fishermen often turn to

nicotine products (Bhondve, 2013). Numerous studies have pointed out that nicotine consumption increases alertness and reduces sleeping time (Laraqui et al., 2022). As they are not getting sufficient sleep, fishermen suffer from sleeping disorders, which ultimately trigger them to smoke to make themselves alert during the night time. Those who are suffering from sleep problems have difficulty stopping their smoking habits, which can ultimately increase the likelihood of developing lung cancer as a consequence of smoking (Hamidovic and de Wit, 2009). A study done in northern Alaska among the fishermen has highlighted the dangerous environment they work in, impacting their health, leading to hearing impairment, musculoskeletal problems, and the quality of sleep, especially during the fishing seasons (Eckert et al., 2018). A study conducted by Sivanesan *et al.* among the rural population of coastal Karnataka found that 39.9 percent of the coastal population has poor-quality sleep (Sivanesan et al., 2022). Not only among fishermen, fisherwomen who sell or market fish have poor sleep cycles (Indu, 2001).

Globally, fishing is considered a physically and mentally demanding occupation (Turner et al., 2018). The UK public health service has identified fishermen as a vulnerable group who are more prone to poor health outcomes when compared to the general population, where lack of sleep, fatigue, and stress play a significant role (Turner et al., 2018). The fishing community is a group of people geographically located in the coastal area, and has their way of life and distinctive culture and share a special relationship with the sea and the environment (Khambete, 2012b). Fishing communities are the neglected and marginalized group who are more prone to acquiring many non-communicable diseases (NCD) (Doddamani et al., 2021), and it may be due to poor dietary practices, low socioeconomic status, increased substance use, stress due to inability to contact the family while they are at sea (Doddamani et al., 2021). Fishing communities are vulnerable groups that have poor access to healthcare facilities (Turner et al., 2018). Fishing is considered a dangerous

occupation in which the fishermen are exposed to health risks both onshore and offshore (Woodhead et al., 2018).

1.26. Fishing community in Kollam district, Kerala:

Kerala, located on the southwest coast of the Indian sub-continent, is bordered by the western ghats to the east and the Arabian Sea to the west, effectively isolating it from the rest of India. Kerala has a coastal line of 589.5 KM, which forms 10% of India's coastal line. The density of the population is very high across the coastal line. The Kollam coastal belt is blessed with the best mineral sand deposits in the country (*Wikipedia*, 2023), and the total population in the fishing villages of Kollam district is around 28 million (Govt of Kerala, 2024). According to the Kerala Fisheries Department, the average fishing land in Kerala accounts for 20% of the total fishing land of the country (Khambete, 2012a). It is estimated that 11.114 lakhs of fisherfolk reside in Kerala, one of the top 10 states for its fisherfolk population (Khambete, 2012a). According to 2019-2020 data, Kollam is one of the districts in Kerala with high fish production (GOI, 2020).

1.3. Gaps in Research:

Sleep quality and sleep quantity are the two essential components of sleep, of which sleep quality is considered a superior index to sleep quantity in assessing sleep (Kohyama, 2021). Research studies value sleep quantity rather than sleep quality because sleep quality is challenging to measure as it is subjective and assessed with three components such as sleepiness during the day, restlessness, and restfulness, which won't have much difference from individual to individual and also the sleep quality was associated with emotional exhaustion, low personal accomplishment, and depersonalization (Chen et al., 2023). On

the other hand, sleep quantity is the duration of sleep a person gets, and there is an inter-individual difference in the quantity of sleep. Fishing communities are one of the neglected and marginalized communities that are more prone to sleep disorders due to their high workload, inconvenient working hours, dangerous working environment, the density of work, etc. (Laraqui et al., 2022). Studies done on fishing communities to assess their sleep disorders are currently lacking.

1.4. Rationale:

The people living in the fishing communities are vulnerable to sleep quality issues due to their occupation, living conditions, environmental factors, etc. Sleep quality is an area that is less studied among coastal populations, and there are very few studies on the sleep quality among the fishing communities. Sleep is an area of high public health concern, which is usually under-recognized and under-reported, and it has a high socioeconomic burden. Sleep can be altered and adjusted to reduce the risk of various chronic health conditions such as hypertension, stroke, diabetes mellitus, and Coronary Artery Diseases (Sharma et al., 2014). There is a clear need to make people aware of the importance of sleep, particularly those more prone to sleep-related difficulties, such as shift workers, fishing communities, etc. However, the prevalence of poor sleep quality and its correlates among fishing communities remains underexplored. Therefore, research is needed to assess the prevalence of poor quality of sleep among members of the fishing community. Moreover, sociodemographic and clinical factors associated with poor sleep quality need to be identified.

1.5. Objectives:

Major objective:

1. To assess the prevalence of poor sleep quality among the fishing community in Kollam district, Kerala.

Minor objective:

1. To identify the sociodemographic factors associated with poor sleep quality among the fishing community in Kollam district, Kerala.
2. To determine the clinical factors associated with the poor sleep quality among the fishing community in Kollam district, Kerala.

CHAPTER 2

METHODOLOGY

2.1 Study design:

A cross-sectional survey was conducted among the fishing communities in Kollam district, Kerala, to assess the prevalence of poor sleep quality. Further sociodemographic and clinical factors associated with poor sleep quality were assessed.

Study setting:

The survey was planned among the fishing communities in Kollam district, Kerala. The study population was restricted to the fishing communities residing in the fishing villages of Kollam district, Kerala.

Sampling frame:

Both men and women residing in the fishing villages of Kollam district, Kerala and engaged in fishing or fishing-related activities such as catching fish, selling or marketing of fish, weaving nets, drying or peeling of fish, working in fish related industries such as pickle making industry, at least for the past one year were considered for sampling.

Sample size:

The sample size calculation was done using Open Epi software. Based on the review of existing literature, the prevalence of poor sleep quality among individuals in rural coastal Karnataka, using the Pittsburgh Sleep Quality Index (PSQI), was found to be 39.9% (Sivanesan et al., 2022). This prevalence was used to estimate the sample size for the present study based on the assumption that the environmental influences leading to inadequate sleep quality among rural coastal Karnataka were comparable to those in Kollam district, Kerala.

With a 95 percent confidence interval and 15% relative precision, the sample size obtained was 258. Cluster random sampling was considered for the study. Considering the prevalence of poor sleep quality, the factors that affect the sleep quality, such as the mode of their job, environmental factors, etc., won't have much deviation within the clusters and between the clusters; by considering this, the intraclass correlation(ƤP) was taken as very minimal, as about 1%. As ten randomly selected clusters were considered, the average cluster size(m) for my study was 25.8 (258/10), rounded off to 26. By substituting in the equation 1+ƤP(m-1), the design effect obtained for my study was 1.25. The sample size obtained for the study was 322, rounded off to 340 to get an equal number of men and women from 10 randomly selected villages.

2.2 Sample selection:

There are 27 fishing villages in Kollam district, Kerala, according to the data published by the Kerala State Coastal Area Development Cooperation Ltd. (KSADC) in 2023 (Govt of Kerala, 2024). Out of 27 fishing villages in Kollam district, 13 fishing villages are from Kollam taluk, and the remaining 14 fishing villages are from Karunagapally taluk. Using R software 4.3.1, 10 fishing villages are selected randomly (five from each Taluk) as listed in Table 1. The geographic location of these villages is shown in Figure 1.

Table 1: List of the fishing villages in Kollam district.

SLNO	FISHING VILLAGES	SLNO	FISHING VILLAGES
KOLLAM TALUK		KARUNAGAPALLY TALUK	
1.	Paravoor South	1.	Puthanthura
***2.**	**Paravoor North**	***2.**	**Karithura**
***3.**	**Mayyanadu**	***3.**	**Kavilthottam**
4.	Eravipuram North	4.	Ponmana
5.	Eravipuram South	5.	Pandarathuruthu
***6.**	**Pallithottam**	***6.**	**Vellanathuruthu**
7.	Port	7.	Cheriya azeekkal
8.	Moodakkara	8.	Alappadu
9.	Vady	9.	Kuzhithura
***10.**	**Thankassery**	***10.**	**Parayakadavu**
11.	Kannimeal	11.	Sraikkadu
12.	Sakthikulangara	12.	Azheekkal
***13.**	**Neendakara**	13.	Maruthoorkulangara
		***14.**	**Kulasekarapuram**

***Ten fishing villages selected for the study (in bold)**

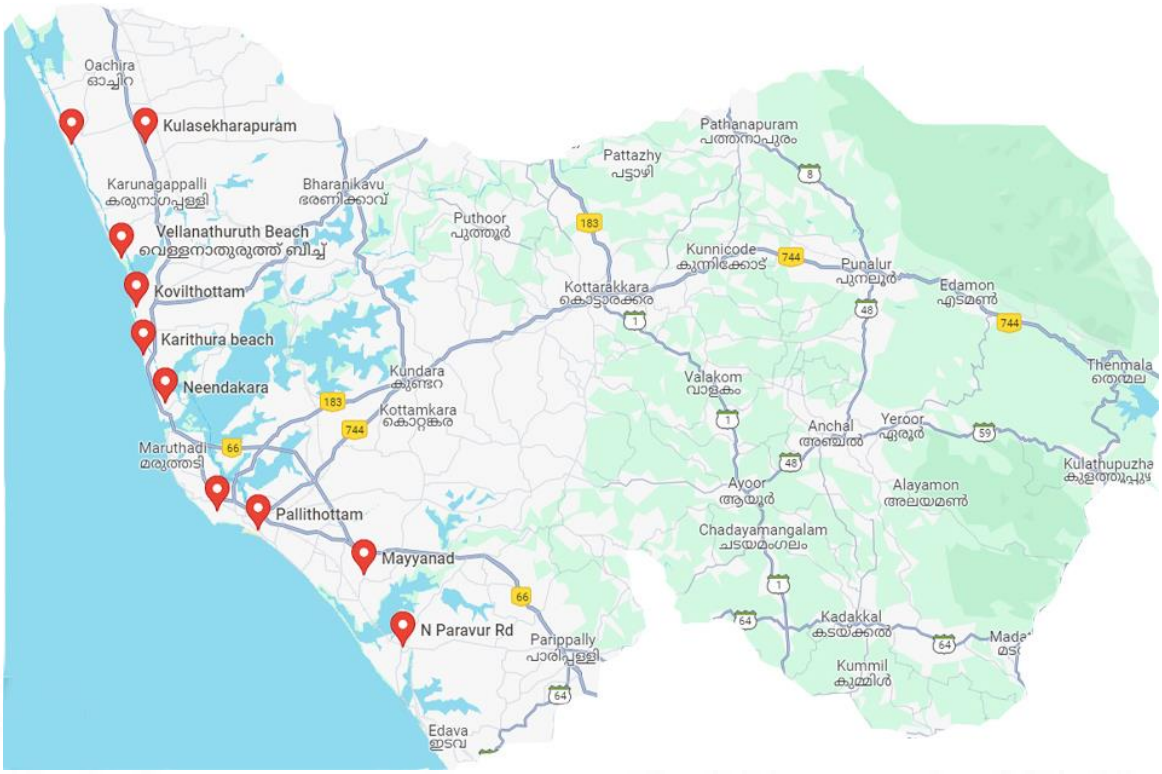

Figure 1: Kollam district map showing the villages selected for the present study

Thirty-four participants (17 males and 17 females) from each of the ten villages were recruited for the study, making for a sample size of 340. The information was gathered through the utilization of a questionnaire in paper format. The PI filled out the questionnaire after obtaining consent from the participants. The anthropometric details such as height, weight, central obesity, and clinical features such as blood pressure measurements were also collected from the study participants.

2.3 Subject selection:

Inclusion criteria:

- Men and women between 18 and 60 years of age residing in the fishing villages of Kollam district who are engaged in fishing or fishing-related activities such as

selling/marketing of fish, weaving nets, drying/ peeling of fish, or working in sea products related industry, e.g., fish pickle making industry for the last one year.

Exclusion criteria:

- Men and women living in the fishing villages and engaged in some other activities other than fishing
- Men and women not living in the fishing villages but engaged in fishing activities
- Bedridden patients, pregnant women, people with neurological issues
- Those who are not willing to participate in the study

2.4. Data collection tool:

Data collection was done from January 1st, 2024, to February 28th, 2024, by the principal investigator (PI) after obtaining approval from the Institutional Ethics Committee (SCT/IEC/2159/DECEMBER/2023).

Data collection technique:

Tool:

The structured questionnaire was developed in English and validated in Malayalam (Pawar et al., 2023). Pittsburgh Sleep Quality Index (PSQI) was used in this study to assess sleep quality among the fishing community. Along with PSQI, the questionnaire also included other relevant questions assessing factors previously associated with sleep quality from the literature. The survey questionnaire had seven sections; the first section gives information about the participant, such as the participant's ID and the cluster from which the participants were taken; the second section was used to record the general

details such as age, gender, educational status, occupation, etc. The third section of the questionnaire assessed the socioeconomic status of the participants, such as the color of the ration card, the number of total earning members, and the family's gross monthly income. The fourth and fifth sections included the understanding of the lifestyle (habits) of the participants. The sixth section included the morbid health condition of the participant, the medicines he/she takes, etc. The seventh section included PSQI to assess sleep quality. The eighth section included anthropometric measurements, including the height, weight, central obesity, and blood pressure (BP) of the participant. The anthropometric measurements were taken at the participant's home.

Instruments for physical measurements were calibrated before starting the study.

Height measurement was done using the standalone stadiometer (SECA 213).

Weight was measured using a battery-operated electronic weighing scale (SECA 803).

Blood pressure readings were obtained using a digital sphygmomanometer (OMRON HEM 907)

Central obesity was measured using a flexible non-stretchable measuring tape (SECA 55).

Procedure:

Blood pressure measurement: Using the digital sphygmomanometer, three readings of BP in a supine (lying down) position on the left hand ten minutes apart. For analysis, an average of three readings were taken.

Height measurement: Height was measured after placing the standalone stadiometer on a flat and firm surface. The subjects were asked to remove the footwear, if any, and step

onto the scale with one foot on each side of the stadiometer. Height was recorded in centimeters.

Weight measurement: The participant's weight was measured after placing the scale on a flat and firm surface. The subjects were asked to remove the footwear, if any, and step onto the scale with one foot on each side of the scale. The subjects were asked to stand still, facing forward, placing arms on the sides until asked to step off. The investigator recorded the weight in kilograms.

Central obesity measurement: The waist circumference is measured using a flexible, non-stretchable measuring tape; the participants are instructed to stand upright with their feet closed. The natural waistline, typically the narrowest part of the torso, is above the navel and below the ribcage. Wrap the measuring tape around the identified waistline. The measuring tape fits snugly without causing any compression on the skin, and it should be aligned parallel to the floor. The measurements are taken at the end of normal expiration. Central obesity was recorded in centimeters.

From the obtained data on height and weight of the participant, the body mass index (BMI) of the participant is calculated manually using the formula weight in kilogram (kg)/ (height in meter (M)) ^2. If the BMI is less than 18.5, it falls within the underweight range; if the BMI is 30 or above, it falls under the obesity range. If the BMI is less than 24.9, it falls under the healthy weight range, and if the BMI is more than 25, it falls within the overweight range (CDC, 2023).

Before the survey, the participants were given the information sheet about the project, and the project details were explained in detail by the principal investigator (PI). After addressing the questions and providing clarifications, the PI requested that the participants sign the consent form.

2.5. Data collection and analysis:

Data collection:

Data collection was conducted from January to February 2024. PI approached each selected village for the data collection. Each village fish market or the port where the boat arrives would be taken as the center point, and randomly allocating the direction, the very first household with a female participant was my first household. From every even house male and every odd house female are taken for the study. PI provides the form to the participants who consented to the study, ensuring participant's convenience in when and where they can participate in the research to ensure privacy and confidentiality.

Data entry and storage:

Data entry was done through an open data kit platform (ODK) and later exported to R 4.3.1 and SPSS version 28 for analysis. Collected hard copies of the data (completed forms) were stored securely under PI's custody, and PI bears the sole responsibility for keeping the data secure and for any breach of confidentiality. The soft data is stored in an encrypted format in a password-protected computer.

Data analysis:

Data analysis was done using the licensed SPSS version 28 and R version 4.3.1. For statistical analysis, a p-value of < 0.05 was considered for statistical significance. For categorical variables, frequencies and proportions were calculated. Mean, median, and standard deviations were calculated for continuous variables. To find the association between the variables, a chi-square test and

bivariate logistic regression were done. Multi-variable logistic regression was done for the variables associated with the bivariate analysis. The association based on a model with the lowest Akaike Information Criteria (AIC) values was selected as the best model.

Global sleep quality is the sum of seven domains of PSQI: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, sleep medication, and daytime dysfunction. The seven domains of this questionnaire were answered through 19 questions, and each question was answered on a Likert scale of four categories. The first two categories indicate good sleep quality, and the third and fourth categories indicate poor sleep quality. The sum of the seven domains of PSQI ranges from 0 – 21, of which a score of five or below shows a good quality of sleep and the scores from 6 – 21 indicate a poor quality of sleep. The scores towards the end of poor-quality sleep are considered the worst sleep-quality scores.

2.6. Ethical consideration:

The present study was reviewed by the institutional Ethics Committee (IEC) of Sree Chitra Tirunal Institute for Medical Science and Technology (SCTIMST), Thiruvananthapuram, Kerala, and the clearance was given to conduct the study (SCT/IEC/2159/DECEMBER/2023). The participants were given the option to decline participation either at the beginning or at any point. There was no anticipated risk for the subjects by participating in this study.

The information sheet and the consent forms were provided to the selected participants before the interview. The interview was conducted after obtaining the written informed consent from the study participants. Privacy was ensured during the interview to the greatest extent possible, and confidentiality of all information

was maintained. The participants were given breaks between answering the questionnaire and taking physical measurements to prevent exhaustion.

All the information will be kept confidential, and at no stage will the participant's identity be revealed. Participant's confidentiality will be safeguarded during and after the study. All the copies of the filled interview and consent form will be kept under the custody of the PI. All the completed interview schedules and consent forms will be destroyed upon completion of five years from the date of acceptance of this thesis in keeping with the regulatory requirement.

2.7. Operational definition of the variables:

Sleep quality: Sleep quality refers to an individual's self-satisfaction with all aspects of sleep experiences (Nelson et al., 2022). Sleep quality can be defined technically as when a man/woman is moving through all the stages of sleep and entering into the non-REM stage (Rapid Eye Movement stage), and if he/she had not addressed any incidence of intermediate waking or very low incidence of intermediate waking. Once they wake up, they feel completely fresh and relaxed; the sleep quality should be considered good (Kohyama, 2021).

Pittsburgh Sleep Quality Index (PSQI): PSQI is the most widely used subjective sleep quality assessment tool in both clinical and non-clinical populations and is regarded as a recognized benchmark or gold standard for self-perceived sleep quality (Fabbri et al., 2021). The PSQI is a self-administered survey designed to evaluate sleep quality within one month (Buysse et al., 1989). PSQI has 19 items in the questionnaire, and it measures seven domains; the sum of the seven domains obtains the sleep quality, and the score ranges

from 0-21. A score higher than five indicates poor sleep quality, and a score of five or less indicates good sleep quality.

Fishing community: A fishing community is a group of people geographically located in the coastal area, and has their way of life and distinctive culture and share a special relationship with the sea and the environment (Khambete, 2012a).

Fishing villages: Fishing villages are characterized by a very large number of houses clustered together and occupying the coastal fringes of the state, where a high density of population live and make their livings through the sea (Khambete, 2012a).

Body Mass Index (BMI): Body Mass Index (BMI) is calculated by dividing an individual's weight in kilograms (or pounds) by the square of height in meters (or feet). If the BMI is less than 18.5, it falls within the underweight range; if the BMI is 30 or above, it falls under the obesity range. If the BMI is less than 24.9, it falls under the healthy weight range, and if BMI is more than 25, it falls within the overweight range (CDC, 2023).

Hypertension: Hypertension or high blood pressure is when the pressure in the blood vessels is 140/90 mmHg or higher (*World Health Organization*, 2023).

Central obesity: Central obesity, also known as abdominal obesity, refers to the accumulation of excess fat around the abdominal area, posing significant health risks and serving as a primary contributor to morbidity and mortality across the world. (Owolabi et al., 2017).

2.8. Classification of variables in the study:

Outcome/ dependent variable: The outcome variable of the study is sleep quality, which was assessed using PSQI. A global sleep quality score of five or less is good, and a score of 6-21 was considered poor-quality sleep.

Exposure/ independent variable:

Socio-demographic indicators:

The sex of the participants was divided into Males and Females.

The participant's marital status was regrouped as having a spouse and not having a spouse/partner.

Education was regrouped into those with no or basic primary education up to the seventh standard as one category and education from the eighth standard and above as another category.

Occupation was regrouped as catching fish and allied work associated with fishing.

Socioeconomic status:

The color of the ration card was considered as a proxy. It was regrouped into above BPL and below BPL.

Household income: regrouped based on the median score, as ≤ ₹10,000 and >₹10,000.

Behavioral indicator:

Smoking tobacco status: regrouped into ever or never users.

Smokeless tobacco status: regrouped into ever or never users.

Alcohol consumption: regrouped into ever or never users.

Consumption of pappad, pickle, and salted fish: regrouped into user or non-users.

Clinical factors:

Presence of any medical condition: regrouped as yes (at least one medical condition) and no medical condition.

Blood pressure: regrouped based on the systolic and diastolic blood pressure values. If the value ≥140/90 mmHg is hypertensive and <140/90 mmHg is normotensive. SBP reading at baseline supine position and the 1^{st}, $2^{nd,}$ and 3^{rd} readings are continuous. DBP reading at baseline supine position and the 1^{st}, $2^{nd,}$ and 3^{rd} readings are continuous.

Anthropometric measures:

Height of the participant in cm.

Weight of the participant in kg.

BMI was regrouped as normal BMI < $25kg/m^2$ and overweight as BMI ≥ $25kg/m^2$ (WHO, 2010).

2.9. Expected outcome:

The study evaluated the prevalence of poor sleep quality within the fishing community. Age-standardized prevalence of poor sleep quality was calculated by categorizing the age, and the weightage was calculated using the 2011 census data of the rural Kollam district. Weightage is the proportion of each age group in the standard population by the age distribution in the population being studied. The age-standardized prevalence was calculated by taking the prevalence of poor sleep quality across different age groups and adjusting it using the weightage factor.

CHAPTER 3

RESULT

The chapter describes the result of the data analysis, formulated based on the study objective. In the first section, a general description of the study participants, along with their socio-demographic, socio-economic, behavioral, clinical, and anthropometric characteristics. This was followed by univariate and multivariate analysis with poor sleep quality as the dependent variable.

3.1. Socio-demographic profile:

The sociodemographic characteristics of the participants are provided in Table 2. The study included 340 participants, an equal number of men and women from the fishing villages of Kollam district, Kerala. The participant's ages ranged from 19 to 59, with a mean and SD of 48.38 ± 8.11 years. Almost two-thirds of the study participants had no education or primary education up to the 7^{th} standard, 38 percent of the study participants had a formal education above the 8^{th} standard, out of which 23 percent had secondary education up to the 10^{th} standard, 10 percent had senior secondary education up to 12^{th} standard, and 5 percent are having graduation or above. Half of the study participants were mainly involved in catching fish, particularly men, and about half of the study participants were working in allied industries; among them, 23 percent of the participants, particularly women, were mainly working in selling or marketing fish. Almost three-fourths of the study participants were married and living with their spouses. The majority of the participants were having two children ranging from (0 – 8). Half of the study participants worked for more than eight hours per day. The median years engaged in work was 22 years, ranging from (1 to 51 years). Three-fourths of the study participants belong below the poverty line (BPL card owners). More than half of the study participants were solo-earning members of their families with a median household income of the family per month of ₹10,000.

Table 2: Socio-demographic characteristics of the study participants (n = 340)

Variable	Category	Number (%)
Age in median year(range)		49 (19 – 59)
Gender	Female	170 (50)
	Male	170 (50)
Education	No education/Basic formal education (up to 7th STD)	212 (62.4)
	Formal education (from 8th STD and above)	128 (37.6)
Occupation	Catching of fish	157 (46.2)
	Allied industries related to fishing	183 (53.8)
Marital status	Having a spouse	260 (76.5)
	Not having a spouse	80 (23.5)
Hours engaged in work	≤ 8 hours/day	166 (48.8)
	>8 hours/day	174 (51.2)
Years engaged in fishing median (range)		22 (1 – 51)
Color of the ration card	Below poverty line (BPL)	289 (85)
	Above poverty line (APL)	51 (15)
Earning members	Only 1 earning member	236 (69.4)
	2 earning members	100 (29.4)
	3 earning members	4 (1.2)
Monthly household income in median (range)		Rs. 10,000 (2000 – 30,000 Rs)

3.2. Lifestyle profile of the study participant

The information about lifestyle factors of the study population is shown in Table 3. More than half of the study participants had never used any form of tobacco products (both smokeless and smoked tobacco), and more than half of the study participants had no habit of using alcoholic beverages. Most of my study participants reported not consuming food rich in salt, such as pickles, dry fish, and pappad, but consuming fruits and vegetables, and the majority had a habit of consuming tea/coffee daily. Most of the study participants slept during the daytime or had split sleep. More than half of the study participants considered their work a form of physical activity. Most participants were using TV or phone while in bed before sleeping.

Table 3: Lifestyle profile of the study participants (n=340)

Variable	Category	Number (%)
Using any form of tobacco	Never	235 (69.1)
	Ever	105 (30.9)
Alcohol consumption habit	Never	218 (64.1)
	Ever	122 (35.9)
Consumption of dry fish per month	No	235 (69.1)
	Yes	105 (30.9)
Consumption of pappad per month	No	260 (76.5)
	Yes	80 (23.5)
Consumption of pickle per month	No	246 (72.4)
	Yes	94 (27.6)
Consumption of vegetables per month	No	20 (5.9)
	Yes	320 (94.1)
Consumption of fruits per month	No	23 (6.8)
	Yes	317 (93.2)
Consuming Tea/ coffee	No	19 (5.6)
	Yes	321 (94.4)
Physical activity	Walk for 70 to 150 minutes	6 (1.8)
	Movement during leisure time	107 (31.5)
	Physical movement for transport	7 (2.1)
	Physical movement for work	183 (53.7)
	High or low-intensity workouts	37 (10.9)
Daytime sleep	No	128 (37.6)
	Yes	212 (62.4)
Watching TV	Viewing TV before bed	129 (37.9)
	Viewing TV while in bed	211 (62.1)
Phone usage	Using phone before bed	77 (22.6)
	Using the phone while in bed	263 (77.4)

3.3. Anthropometric and Clinical profile of the study participant

The anthropometric and clinical parameters of the study participants are shown in Table 4. Participant's height and weight ranged from 134 to 180cm and 36 to 106Kg respectively. Two-thirds of the study participants were obese/overweight. Half of the study participants were currently suffering from a medical condition and were on medications. More than one-fourth (~22.6%) of the participants were hypertensive.

Table 4: Anthropometric and clinical parameters of the study participants (n=340)

Variables	Components	Number (%)
BMI (in Kg/m^2)	Underweight (<18.5)	10 (2.9)
	Normal weight (18.5 – 24.9)	115 (33.9)
	Overweight (>25)	215 (63.2)
Medical conditions	No	171 (50.3)
	Yes	169 (49.7)
Blood pressure	Normotensive	263 (77.4)
	Hypertensive	77 (22.6)

3.4 Components of PSQI among the study participants

The Pittsburgh sleep quality index (PSQI) components are shown in Table 5. More than half of the study participants had very poor subjective sleep quality, taking more than 60 minutes to fall asleep and sleeping for less than 5 hours per night, and the other components of PSQI are briefly described in the table.

Table 5: Components of PSQI among study participants (n = 340)

Variables	Components	Number (%)
Subjective sleep quality	Very good	12 (3.5)
	Fairly good	102 (30)
	Fairly poor	52 (15.3)
	Very poor	174 (51.2)
Sleep latency	Less than 15 minutes	36 (10.6)
	15- 30 minutes	79 (23.2)
	31-60 minutes	35 (10.3)
	More than 60 minutes	190 (55.9)
Sleep duration	More than 7 hours	14 (4.1)
	6-7 hours	46 (13.5)
	5-6 hours	48 (14.1)
	Less than 5 hours	232 (68.3)
Habitual sleep efficiency	More than 85%	123 (36.2)
	75- 84%	96 (28.2)
	65 – 74%	52 (15.3)
	Less than 65%	69 (20.3)
Sleep disturbances	Not in the past month	1 (.3)
	Once in a week	104 (30.6)
	1-2 times a week	203 (59.7)
	More than thrice a week	32 (9.4)
Sleep medications	Not in the past month	314 (92.4)
	Once in a week	0 (0)
	1-2 times a week	1 (.3)
	More than thrice a week	25 (7.3)
Daytime dysfunction	No difficulty	157 (46.2)
	Little difficulty	18 (5.3)
	Difficult	46 (13.5)
	Very difficult	119 (35)

3.5. Prevalence of poor sleep quality

The Cronbach's alpha for the validated Malayalam version of PSQI in the present analysis was 0.77 (95% CI: 0.714 – 0.793). In the fishing communities of Kollam district, Kerala, the prevalence of poor sleep quality was 83.5 percent (95% CI: 79.7 – 87.4). The age-

standardized prevalence of poor sleep quality among the fishing community was 70.1 percent (95% CI: 60.3 – 79.8).

3.6. Association of poor sleep quality and the sociodemographic factors

The frequencies of poor sleep quality across various socio-demographic factors are shown in Table 6. Bivariate analysis was done to find the association between the dependent variable, poor sleep quality, and the independent variables. The mean age, marital status and education of participants were associated with poor sleep quality (Table 6). On further analysis, increase in age showed, 1.07-fold higher odds of having poor quality of sleep (Table 10). Similarly, those who are not married/ those who don't have a spouse had 3.6 times higher odds of poor sleep quality when compared to those who are married/ those who currently live with their spouse. On the other hand, participants with an education above primary level (from 8th standard and above) had 0.32 times lower odds of poor sleep quality when compared to those with no formal education or having a basic education up to 7th standard (Table 10).

Table 6: Association of sleep quality with socio-demographic details of the study participant (n = 340)

Variable	Category	Good sleep quality	Poor sleep quality	Chi-square (P value)
Age (mean ±SD)		**44.5 ± 9.2**	**49.1 ± 7.6**	**0.001***
Gender	Male	29 (17.1)	141 (82.9)	0.086 (0.77)
	Female	27 (15.9)	143 (84.1)	
Education	**No education/ basic formal education up to 7th standard**	**22 (10.4)**	**190 (89.6)**	**15.19 (<0.001)**
	Education from 8th standard and above	**34 (26.6)**	**94 (73.4)**	
Occupation	Catching fish	27 (17.2)	130 (82.8)	0.11 (0.74)
	Allied industries	29 (15.8)	154 (84.2)	
Physical activity	Mild walking or walking during leisure time	18 (15.9)	95 (84.1)	3.24 (0.34) (F)
	Movement for transport	2 (28.6)	5 (71.4)	
	Movement for work	27 (14.8)	156 (85.2)	
	High-intensity workouts	9 (24.3)	28 (75.7)	
Years engaged	≤ 20 years	35 (18.7)	152 (81.3)	1.52 (0.22) (F)
	> 20 years	21(13.7)	132 (86.3)	
Working hours	≤ 8 hours/day	26 (15.7)	140 (84.3)	0.15 (0.69)
	> 8 hours/ day	30 (17.2)	144 (82.8)	
Marital status	**Having a spouse**	**51 (19.6)**	**209 (80.4)**	**7.94 (0.005)**
	Not having a spouse	**5 (6.2)**	**75 (93.8)**	
Number of children	≤ 2 children	45 (15.6)	244 (84.4)	0.14 (0.71)
	> 2 Children	11 (21.6)	40 (78.4)	

* Mann Whitney test, (F) indicates Fisher's exact test

3.7. Association of poor sleep quality and the economic status

While assessing the association of sleep quality with the socio-economic variables of the study participants, we found that monthly household income was associated with sleep quality, as shown in Table 7. Upon further analysis, those with a monthly income of ≤ ₹10,000 had around 3 times higher odds of poor sleep quality when compared to those with an income of more than ₹10,000 (Table 10).

Table 7: Association of sleep quality with the economic status of the study participants (n = 340)

Variable	Category	Good sleep quality	Poor sleep quality	Chi-square (P value)
Ration card	BPL card	45 (15.6)	244 (84.4)	1.13 (0.28)
	APL card	11 (21.6)	40 (78.4)	
Earning members	One earning member	33 (14)	203 (86)	3.47 (0.06)
	≥ 2 earning members	23 (22.1)	81 (77.9)	
Monthly household income	**>10,000 ₹**	**21 (30.4)**	**48 (69.6)**	**12.27 (<0.001)**
	≤ 10,000 ₹	**35 (12.9)**	**236 (87.1)**	

3.8. Association of poor sleep quality and the life style profile

The association of sleep quality with the lifestyle profile of the study participant is shown in Table 8. We observed that consumption of pappad was associated with the quality of sleep. Upon further analysis came to the conclusion that those who consume pappads have 0.41 times lower odds of poor sleep quality than those who consume pappads (Table 10).

Table 8: Association of sleep quality with lifestyle profile of the participants (n = 340)

Variable	Category	Good sleep quality	Poor sleep quality	Chi-square (P value)
Tobacco use (smokeless & smoked)	Never	44 (18.7)	191 (81.3)	2.81 (0.09)
	Ever	12 (11.4)	93 (88.6)	
Alcohol use	Never	38 (17.4)	180 (82.6)	0.41 (0.52)
	Ever	18 (14.8)	104 (85.2)	
Consumption of dry fish	No	12 (11.4)	93 (88.6)	2.81 (0.09)
	Yes	44 (18.7)	191 (81.3)	
Consumption of pappad	No	**7 (8.8)**	**73 (91.2)**	**4.53 (0.04)**
	Yes	**49 (18.8)**	**211 (81.2)**	
Consumption of pickle	No	11 (11.7)	83 (88.3)	2.14 (0.14)
	Yes	45 (18.3)	201 (81.7)	
Consumption of vegetables	No	4 (20)	16 (80)	0.015 (0.66)
	Yes	52 (16.2)	268 (83.8)	
Consumption of fruits	No	4 (17.4)	19 (82.6)	0.015 (0.90)
	Yes	52 (16.4)	265 (83.6)	
Consuming Tea/ coffee daily	No	5 (26.3)	14 (73.7)	1.41 (0.23)
	Yes	51 (15.9)	270 (84.1)	
Watching TV	Viewing TV before bed	26 (20.2)	103 (79.8)	2.05 (0.15)
	Viewing TV while in bed	30 (14.2)	181 (85.8)	
Phone usage	Using phone before bed	16 (20.8)	61 (79.2)	1.34 (0.25)
	Using phone while in bed	40 (15.2)	223 (84.8)	

3.9. Association of poor sleep quality and the anthropometric and clinical parameters

The association of sleep quality with clinical and anthropometric variables is shown in Table 9. The presence of any health condition and being overweight or obese were linked to poor sleep quality. The study participants with a medical condition had 3.23 times higher odds of poor sleep quality when compared to those without a medical condition. Similarly, overweight and obese participants had 3.27 times higher odds of poor sleep quality when compared to those with normal body weight (Table 10).

Table 9: Association between clinical and anthropometric parameters with quality of sleep among the study participants (n = 340)

Variable	**Categories**	**Good sleep quality**	**Poor sleep quality**	**Chi-square (P value)**
BMI	**Normal weight**	**34 (27.2)**	**91 (72.8)**	**16.54 (<0.001)**
	Overweight and obesity	**22 (10.2)**	**193 (89.8)**	
Presence of any medical condition	**No**	**41 (24)**	**130 (76)**	**14.08 (<0.001)**
	Yes	**15 (8.9)**	**154 (91.1)**	
Blood pressure	Normotensive	47 (17.9)	216 (82.1)	1.65 (0.19)
	Hypertensive (Bp ≥ 140/90)	9 (11.7)	68 (88.3)	

Table 10: Association of different predictor variables with poor quality of sleep

Variable	Categories	Chi-square (p-value)	Crude odds ratio (95% CI)
Sociodemographic characteristics			
Age		0.001***	1.07 (1.03 – 1.10)
Marital status	Having a spouse	7.94 (0.005)	1 (Reference)
	Not having a spouse		3.66 (1.14 – 9.52)
Education	No education/ basic formal education up to 7th standard	15.19 (<0.001)	1 (Reference)
	Education from 8th standard and above		0.32 (0.17 - 0.57)
Economic characteristics			
Monthly household income	>10,000 Rs	12.27 (<0.001)	1 (Reference)
	≤10,000 Rs		2.95 (1.58 – 5.50)
Life style characteristics			
Consumption of pappad	No	4.53 (0.04)	1 (Reference)
	Yes		0.41 (0.18 - 0.95)
Clinical and anthropometric characteristics			
BMI	Normal weight	16.54 (<0.001)	1 (Reference)
	Overweight and obesity		3.27 (1.81 – 5.92)
Presence of any health condition	No	14.08 (<0.001)	1 (Reference)
	Yes		3.23 (1.71 – 6.11)

3.10. Multivariate analysis

Based on the bivariate analysis, independent factors such as age, education, marital status, household income, consumption of pappad, presence of any health condition, and BMI were found to be associated with poor quality of sleep. To avoid multi-collinearity in the model, the variables that showed a correlation were removed from the model.

For multivariate analysis, with poor sleep quality as the outcome variable, multiple models were tested using the Enter method. The best model selection was determined by identifying the one with the lowest Akaike information criteria (AIC) value. Four models were built using the following variables:

Model 1: Age + Marital status

Model 2: Model 1 + Income

Model 3: Model 2 + Presence of any condition

Model 4: Model 3 + BMI

Model 4 had the least AIC value and was selected as the best model, as shown in Table 11. The model explains the independent variable associated with the poor quality of sleep. Every unit increase in age had 1.05 times higher odds of poor sleep quality. The model suggests an independent association between poor sleep quality and socio-demographic variables such as marital status and monthly household income. Those who are not married have 3.3 times higher odds of poor quality of sleep than those who are married. Similarly, participants with a monthly income of less than ₹10,000 had 2.54 times higher odds of poor sleep quality when compared to those with a monthly household income of more than ₹10,000. The clinical and anthropometric parameters also show an association with sleep quality. Those with a medical condition had 2.18 times higher odds of poor sleep quality than those without any medical condition. Similarly, those who were overweight or obese

had 3.01 times higher odds of poor sleep quality when compared to those with normal body weight.

Table 11: Result of multivariable logistic regression analysis

Variables	**Categories**	**Crude odds ratio (95 % CI)**	**Adjusted odds ratio (95 % CI)**
Age		1.07 (1.03 – 1.10)	1.05 (1.004 – 1.089)
Marital status	Having a partner	1 (Reference)	1 (Reference)
	Not having a partner	3.66 (1.14 – 9.52)	3.3 (1.2 – 9.1)
Gross household income	>10,000 Rs	1 (Reference)	1 (Reference)
	=<10,000 Rs	2.95 (1.58-5.50)	2.54 (1.29 – 5.02)
Presence of any condition	No	1 (Reference)	1 (Reference)
	Yes	3.24 (1.71 – 6.12)	2.14 (1.03 – 4.45)
BMI	Normal weight	1 (Reference)	1 (Reference)
	Overweight and obesity	3.28 (1.81 – 5.92)	3.01 (1.61 – 5.65)

CHAPTER 4

DISCUSSION AND CONCLUSION

The present cross-sectional community-based study was envisaged to evaluate the prevalence of poor sleep quality among the fishing communities of Kollam district, Kerala. In doing so, we aimed to find the association between socio-demographic and clinical factors associated with sleep quality in fishing communities.

4.1. **General socio-demographic characteristics**

The sociodemographic characteristics of the study were similar to a study published by Sivanesan *et al.* in 2022 among the rural coastal Karnataka population (Sivanesan et al., 2022). Although the sociodemographic factors such as educational level, marital status, age, and location (rural coastal) are comparable between my study and the one conducted by Sivanesan *et al.*, there exists a notable disparity in sleep quality nearly double. This variance could potentially stem from the fact that while Sivanesan *et al.* examined individuals residing in the coastal region of rural Karnataka, my study specifically targeted fishing communities within the coastal areas of Kollam district. In our study, around two-thirds of the participants had no formal education or had only formal education up to 7th standard; this reflects a widespread disadvantage in education among the coastal fishing communities (Maddox, 2007). Generally, people engaged in night shift occupation won't be able to get a continuous 8 hours of sleep instead; they mostly have multiple episodes of sleep, also known as split sleep (Matsangas and Shattuck, 2020). Most participants in the present study had split sleep, as they didn't get enough time to sleep in the night due to their occupation. Rather than split or continuous sleep, 8 hours of sleep is most important for an individual's health (Sargent et al., 2022). A study by Chinnakali *et al.* found that fishermen are more prone to alcohol consumption habits to make themselves awake and

alert during sea time (Chinnakali et al., 2016). The majority of the male participants in my study have an alcohol consumption habit, which is similar to the prevalence of alcohol consumption available in the literature (Chinnakali et al., 2016). The male study participants were using both the smoke and smokeless form of tobacco, and very few female study participants were using a smokeless form of tobacco. Studies done among the coastal population of Kerala show a high prevalence of consumption of smokeless tobacco among the people engaged in occupation at sea (Sandhya et al., 2013).

4.2. **Prevalence of poor sleep quality**

In the current study, the prevalence of poor sleep quality among the fishing communities of Kollam district, Kerala, was 83.5 percent (95% CI 79.7 – 87.4), and the age-standardized prevalence of poor sleep quality among the fishing community was 70.1 percent (95% CI 60.3 – 79.8). Such a high prevalence of poor sleep quality was observed among the US Navy sailors; 80.4 percent of the sailors had a poor quality of sleep (Matsangas and Shattuck, 2020). Not only among sailors/ fishing communities, the people with night shift occupations, such as health care professionals, security guards, and truck drivers, also have poor sleep quality (Rocha et al., 2022). The main reason for this can be occupational stress from the operational environment; the places where they usually sleep may be crowded and congested or even noisy, so they won't be able to get a good quality of sleep. A study done in Bahrain among healthcare professionals using the PSQI tool concluded that 75.2 percent of the study participants had poor sleep quality (Jahrami et al., 2021). Those people who are engaged in the night shift usually have multiple episodes of sleep (split sleep) rather than single episodes of sleep during the night; while assessing the sleep quality using the PSQI tool, we are only considering night sleep (single episodes), which may be the reason for such a high prevalence among them.

4.3. **Factors associated with poor sleep quality**

Our multivariable logistic regression analysis revealed that sociodemographic factors (age, marital status, household income), anthropometric parameters such as BMI, and clinical parameters such as morbid health conditions are independently associated with poor sleep quality.

The study among the fishing community came up with a conclusion that age is associated with poor quality of sleep; literature suggests that as people get older, there is a shift in the circadian rhythm, which affects their bedtime and waking time and can ultimately affect their quality of sleep (George et al., 2018). With the advance in age, individuals may develop chronic health conditions such as arthritis, cardiovascular diseases, respiratory diseases, etc., which can affect their quality of sleep (Prasad et al., 2012), the pain and the difficulty that they face due to these chronic conditions can alter their sleep patterns. Hormones such as melatonin, which help maintain the circadian rhythm and the sleep-wake cycle, are altered with advancing age, which may affect the quality of sleep (Anghel et al., 2022).

The present study showed an association of marital status with sleep quality, similar to a previous report by Troxel *et al.* (Troxel et al., 2010). Those who are married have a psychological sense of safety and security and a reduced feeling of loneliness (McLay et al., 2021), and their financial dependency on their partner may be the reason for their better quality of sleep. It is not the status of being married that helps to get a better quality of sleep rather, the stability of the relationship may be the reason (Troxel et al., 2010). While in pair bonding and maintaining intimacy, oxytocin and other neurohormones are generated in the body, which has a sedative property, which may also be the reason for good quality of sleep among people with a partner when compared to those without a partner or those who are living alone (Gobrogge and Wang, 2015). The financial stability of an individual

can affect their quality of sleep (Gaston et al., 2023). Not only among old adults, the financial constraint associated with poor sleep quality even in young adults (Hall et al., 2008).

Both sleep quality and sleep duration (having long or short sleep at night) were associated with the occurrence of overweight and obesity (Keramat et al., 2023). According to research conducted by Li in 2021, individuals who slept fewer than seven hours were 1.83 times more inclined to be overweight and 1.57 times more prone to obesity compared to those who slept for seven to nine hours (Li, 2021). In the present study, the majority (~68.3%) of the study participants had a sleep duration of less than five hours, which may lead to being overweight/obese and poor quality of sleep. As sleep duration is one component of sleep quality, reduced sleep duration can affect the quality of sleep. Laboratory studies show that those with abnormal sleep patterns/reduced daily sleep and lack of quality sleep can experience hormonal alteration, which favors them to have food rich in calories and decreased energy expenditure, which may ultimately lead to gaining body weight (Beccuti and Pannain, 2011). Due to the study's cross-sectional nature, we cannot establish if the link between obesity and poor sleep quality is causal.

There is a known relationship between the health of an individual and sleep. Those who are healthy can sleep properly. Those who are sleeping for less than 7 hours/day are more prone to have chronic conditions such as diabetes mellitus, hypertension, depression, etc. (Colten et al., 2006a), and the presence of existing diseases can affect the quality of sleep (Reis et al., 2018). In my study, about 68.3% of the study participants had less than five hours of sleep per night, making them more prone to many chronic conditions and poor quality of sleep.

4.4. Strength and limitation:

To the best of our knowledge, this study represents the first attempt to evaluate the prevalence of poor sleep quality among the fishing communities of Kerala.

Selection bias is one of the major errors which can occur in a cross-sectional study. To avoid that, we did cluster random sampling, and the participants were taken from the ten randomly selected fishing villages of Kollam district, Kerala. A single investigator did the collection of data; this may help in eliminating, the inter-observer bias. WHO recommended calibrated Instruments used for anthropometric measurements in their different studies, and the same instruments were used for all participants. The instruments were calibrated to remove the systematic technical bias from the study. The sleep quality was assessed using the standardized Malayalam-translated version of the Pittsburgh Sleep Quality Index (PSQI) tool.

Despite the number of strengths, the study was cross-sectional with certain inherent limitations. The PSQI tool used to assess the sleep quality in my study was a screening tool; thus, the prevalence obtained may be overestimated. The tool primarily evaluates the quality of sleep during the night without considering whether the individual experiences fragmented or multiple episodes of sleep. The PI approached the fishing village through the panchayat president of that respective village; females were reluctant to answer the questions regarding the lifestyle habits or socially acceptable answers regarding the lifestyle habits due to his presence.

4.5. Conclusion and recommendation

This study contributes to a greater understanding of the sleep quality among the fishing communities of Kerala. The findings from this study highlight the high prevalence of poor sleep quality among fishing communities and highlight the importance of such studies

among the people engaged in night shift work for their livelihood. Further, an independent association of poor quality of sleep was observed with age, marital status, household income, presence of any medical condition, and BMI. Sleep is an essential physiological process of the body, which has the potential to affect our health and result in a more significant burden of non-communicable diseases.

We can recognize that fishing communities often experience a significant incidence of sleep problems due to the demands of their occupation. However, it's essential to educate them about the importance of sleep quality through seminars or classes. This awareness can help them ensure they get at least 7 hours of sleep per day by implementing strategies like multiple episodes of sleep. Sleep medicine units may be started in the family health center (FHC), especially for those with severe problems. Community engagement should be made available for those who feel lonely; by doing so, we can make people feel safe and secure and thereby reduce their sleep issues.

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INTERVIEW SCHEDULE

DATE:

SL NO	QUESTIONS	CODING CRITERION	CODE OPTION	VARIABLES
A	IDENTIFICATION OF PARTICIPANT			
1.	Participant id:			
2.	Cluster:			
B	GENERAL DETAILS			
3.	Age of the participant:	Completed age as of 01.01.2024		AGE
4.	Gender of the participant:	Male Female Transgender	0 1 2	GENDER
5.	Educational status: (Highest level attained so far)	Informal education Formal primary education (up to 7th STD) Secondary education (up to 10th STD) Senior secondary education (higher secondary) Graduate and above	0 1 2 3 4	EDU

6.	What is your current occupation?	Catching fish Selling/ marketing of fish Weaving nets Peeling of fish Fish pickle-making industry Others	0 1 2 3 4 Please specify	OCCU
7.	How long have you been involved in fishing or fishing-related activities?	…….years		WORKINGSINCE
8.	How many hours do you work on an average? (in a day)	< 8 hours >=8 hours	0 1	WORKINGDURATION
9.	Marital status	Married Unmarried Widow Separated Others	0 1 2 3	MARITAL Please specify
10.	Number of children:			CHILDRENS
C	ECONOMIC STATUS			
11.	What is the color of the ration card?	Yellow card Pink card Blue card White card	0 1 2 3	RATIONCARD

12.	How many earning members are there in the family?			EARNINGMEMBER
13.	How much is the gross household income in the last month?			INCOME
D	UNDERSTANDING THE HABITS OF THE PARTICIPANT			
14.	Are you currently using or in the past have used any form of tobacco (both smoking and smokeless tobacco)? (If the answer is '**YES'** go to Question number 14(a)/14(b). If the answer is '**No**' go to question Number 15	No Yes	0 1	TOBACCOUSER
14(a)	Smoking habit of the participant:	Never smoked Smoked in the past Current smoker	0 1 2	SMOKINGSTATS
14(b).	Use of smokeless tobacco like Betel nuts, Pan parang, Hans, or any other smokeless addictive substance	Never used Used in the past Current user	0 1 2	CHEWTOBACCO
15.	How often do you have a drink containing alcohol?	Never Monthly twice/thrice or less 2 0r 4 times a month	0 1 2 3	ALCOHOL

		2 or 3 times a week 4 or more times a week	 4	
16.	Do you carry out any form of physical activity?	Walking for 70-150 minutes Movement during the leisure time Physical movement for transport Physical movement for work Low or high-intensity workouts.	0 1 2 3 4	PHYSICALACTIVITY
17.	Do you take a daytime nap? (If the answer is '**YES'** go to Question number 17(a). If the answer is '**No**' go to section E)	Yes No	0 1	NAP
17(a)	How long? (In Minutes)			NAPTIME
E.	UNDERSTANDING THE FOOD HABITS OF THE PARTICIPANT			
18.	How often do you consume dry fish?	Not consuming 2 or 4 times in a month Less than 4 times a week More than 4 times a week	0 1 2 3	DRYFISH

19.	How often do you eat pappad?	Not consuming 2 or 4 times in a month Less than 4 times a week More than 4 times a week	0 1 2 3	PAPPAD
20.	How often do you eat pickles?	Not consuming 2 or 4 times in a month Less than 4 times a week More than 4 times a week	0 1 2 3	PICKLE
21.	In a typical week, on how many days do you eat fruit? (USE SHOWCARD) Ask the participant to think of any fruit on the showcard. A typical week means a "normal" week when the diet is not affected by cultural, religious, or other events. If the answer is 'yes' go to question no.21(a), if 'no' go to question no.22)	Number of days		FRUITDAY
21(a)	How many servings of fruit do you eat on one of those days?	Number of servings		FRUITSERVING

	(USE SHOWCARD) Ask the participant to think of one day he/she can recall easily. Refer to the showcard for serving sizes			
22.	In a typical week, on how many days do you eat vegetables? (USE SHOWCARD) Ask the participant to think of any fruit on the showcard. A typical week means a "normal" week when the diet is not affected by cultural, religious, or other events. If the answer is 'yes' go to question no.22(a), if 'no' go to question no.23)	Number of days		VEGITABLEDAY
22(a)	How many servings of vegetables do you eat on one of those days? (USE SHOWCARD) Ask the participant to think of one day he/she can recall easily. Refer to the showcard for serving sizes.	Number of servings		VEGITABLESERVING
23.	How many cups of tea/ coffee do you take on average daily?			TEACOFFEE
F.				

	MORBID HEALTH CONDITION			
24.	Has any Doctor or medical professional detected you with any of the following conditions? (If you have any of these conditions go to Question number 24(a). If the answer is '**No**' go to question Number 25)	Hypertension Diabetes COPD Chronic kidney disease Chronic artery disease Cerebrovascular accidents Heart failure Cataract Dementia Cancer Depression Anxiety	0 1 2 3 4 5 6 7 8 9 10 11	CHRONICCONDITION
24(a).	Are you taking medicine for any of these conditions? (If the answer is '**YES'** go to Question number 24(b). If the answer is '**No**' go to question Number 25)	Yes No	0 1	TAKINGMED.
24(b).	Can I see all the medications that you commonly take?	Alpha/beta agonist Short acting beta 2 agonist (bronchodilators)	0 1	MEDICATION

		Angiotensin converting enzyme inhibitors Beta blockers Biguanides Acetylcholinesterase inhibitors Serotonin norepinephrine reuptake inhibitor Selective serotonin reuptake inhibitor Opioid pain relivers Alpha blockers Short term anti-inflammatory medication Long term immunosuppressants Stimulants	2 3 4 5 6 7 8 9 10 11 12	
G.	PITTSBURGH SLEEP QUALITY INDEX			
25.	During the past month, what time have you usually gone to bed at night?.....			BEDTIME
26.	During the past month, how long (in minutes) has it	< 15 minutes 16-30 minutes	0 1	SLEEPLATENCY

	usually takes you to fall asleep each night?	31-60 minutes > 60 minutes	2 3	
27.	During the past month, what time have you usually gotten up in the morning?			WAKEUPTIME
28.	During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed).	> 7 hours 6-7 hours 5-6 hours < 5 hours	0 1 2 3	SLEEPDURATION
29.	During the past month, how often have you had trouble sleeping because you…			
A	Cannot get to sleep within 30 minutes:	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	SLEEPWITHIN30 MIN.
B	Wake up in the middle of the night or early morning	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	WAKEUP
C.	Have to get up to use the bathroom:	Not during the past month Less than once a week	0 1	USINGBATHROOM

		Once or twice a week Three or more times a week	2 3	
D.	Cannot breathe comfortably:	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	BREATHINGDIFFICULTY
E	Cough or snore loudly:	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	SNORING
F	Feel too cold:	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	FEELINGCOLD
G	Feel too hot:	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	FEELINGHOT
H.	Have bad dreams	Not during the past month Less than once a week	0 1	BADDREAMS

		Once or twice a week Three or more times a week	2 3	
I.	Have pain:	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	PAIN
J.	Other reason(s), please describe…… ……			
30.	During the past month, how often have you taken medicine to help you sleep (prescribed or "over the counter")?	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	SLEEPMEDICATION
31.	During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?	Not during the past month Less than once a week Once or twice a week Three or more times a week	0 1 2 3	DAYTIMEDYSFUNCTION
32.	During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?	No problem at all Only a very slight problem Somewhat of a problem Very big problem.	0 1 2 3	KEEPINGENTHUSIASM
33.	During the past month, how would	Very good Fairly good	0 1	SLEEPQUALITY

	you rate your sleep quality overall?	Fairly bad Very bad	2 3	
34.	Do you own a smart phone? (If the answer is '**YES'** go to Question number 34(a). If the answer is '**No**' go to question Number 35)	Yes No	0 1	SMARTPHONE
34(a).	How long before going to bed, you stop using smart phone?	1 hour before 30 minutes before 15 minutes before Till I sleep	0 1 2 3	BEFORESLEEPPHONE
35.	Do you own a TV? (If the answer is '**YES'** go to Question number 35(a). If the answer is '**No**' go to question Number 36)	Yes No	0 1	TV
35(a)	How long before going to bed, you stop watching TV?	1 hour before 30 minutes before 15 minutes before Till I sleep	0 1 2 3	BEFORESLEEPTV
H.	ANTHROPOMETRIC MEASURES			
36.	Height:	(In centimetre cm)		HEIGHT

37.	Weight:	(In kilograms kg)				WEIGHT
38.	BMI:					BMI
39.	Central obesity measure:					CENTRALOBESITY
I	SYSTOLIC AND DIASTOLIC BLOOD PRESSURE					
40.	Blood pressure using the electronic blood pressure detecting apparatus:	Systolic BP	Diastolic BP	Average BP:		BP

FOR VERIFICATION PURPOSE ONLY FOR THE PRINCIPAL INVESTIGATOR:

SLNO	PURPOSE	CLASS OF MEDICATION	COMMON NAMES
1.	Cold and allergy decongestants	Alpha/beta agonist	Phenylephrine (Sudafed PE) Pseudoephedrine (Sudafed)
2.	Asthma medication	Short acting beta 2 agonist (bronchodilators)	Pirbuterol (Maxair Autohaler) Albuterol (Proventil HFA, ProAir and Ventolin HFA) Levalbuterol (Xopenex)
3.	Blood pressure medication	Angiotensin-converting enzyme (ACE) inhibitors: Beta blockers:	Benazepril(Lotensin), Enalapril (Vasotec), Lisinopril (Prinivil), Quinapril (Accupril), Ramipril (Altace) Propranolol (Inderal) Nadolol (CorGard) Pindolol (Visken), labetalol (Normodyne) Penbutolol (Levatol) Sotalol (Betapace) Carvedilol (Coreg)
4.	Diabetic medication	Biguanides	Metformin (Glucophage)
5.	Memory medication	Acetylcholinesterase inhibitors	Donepezil (Aricept) Galantamine (Razadyne) Rivastigmine (Exelon)
6.	Mood and anxiety medication	Selective serotonin reuptake inhibitor Serotonin norepinephrine reuptake inhibitor	Fluoxetine (Prozac) Citalopram (Celexa), Escitalopram (Lexapro), Sertraline (Zoloft), Paroxetine (Paxil), Fluvoxamine (Luvox) Venlafaxine (Effexor), Desvenlafaxine (Pristiq), Milnacipran (Savella),

			Levomilnacipran (Fetzima), Duloxetine (Cymbalta)
7.	Pain medications	Opioid pain relievers	fentanyl (Duragesic), morphine (Avinza), hydrocodone (Norco), oxycodone (OxyContin), oxymorphone (Opana) and tramadol (Ultram)
8.	Prostrate medication	Alpha-blockers	Alfuzosin (Uroxatral), Doxazosin (Cardura), Prazosin (Minipress), Silodosin (Rapaflo), Terazosin (Hytrin) and Tamsulosin (Flomax)
9.	Stimulants	Stimulants	Amphetamine-dextroamphetamine (Adderall), Methylphenidate (Concerta), Dextroamphetamine (Dexedrine), Dexmethylphenidate (Focalin), Methylphenidate (Ritalin), Lisdexamfetamine (Vyvanse)
10.	Steroid	Short-term anti-inflammatory medications Long-term immunosuppressive agents	Prednisone (Deltasone), Methyl-prednisolone (Medrol), Dexamethasone (Decadron)

ഇന്റർവ്യൂ ഷെഡ്യൂൾ

തീയതി:

****പിറ്റ്സ്ബർഗ് ഉറക്ക ഗുണനിലവാര സൂചിക**

സീരിയൽ നമ്പർ	ചോദ്യങ്ങൾ	കോഡിംഗ് മാനദണ്ഡം	കോഡ് ഓപ്ഷൻ	വേരിയബിളുകൾ
A	**പങ്കെടുക്കുന്നയാളുടെ വിശദാംശങ്ങൾ**			
1.	പങ്കെടുക്കുന്നയാളുടെ ഐഡി: (അന്വേഷകൻ പൂരിപ്പിക്കേണ്ടതുണ്ട്)			
2.	ക്ലസ്റ്റർ നമ്പർ (അന്വേഷകൻ പൂരിപ്പിക്കേണ്ടതുണ്ട്)			
B.	**പൊതുവായ വിശദാംശങ്ങൾ**			
3.	പങ്കെടുക്കുന്നയാളുടെ പ്രായം:	01.01.2024-ന് പൂർത്തിയാക്കിയ പ്രായം		AGE
4.	പങ്കെടുക്കുന്നയാളുടെ ലിംഗഭേദം:	ആൺ സ്ത്രീ	0 1 2	GENDER

**Pawar N, Majumdar A, Nedungalaparambil NM, Nair L, Sulaiman J, Gupta S, et al. COVID-Somnia: A Multicentric Study on Sleep Disturbances During the COVID-19 Pandemic With Spatial Mapping of Hotspots. Cureus. 15(5):e39213.

		ട്രാൻസ്ജെൻഡർ		
5.	നിങ്ങളുടെ വിദ്യാഭ്യാസ നില: (ഇതുവരെ നേടിയ ഏറ്റവും ഉയർന്ന നില)	അനൗപചാരിക വിദ്യാഭ്യാസം ഔപചാരിക പ്രാഥമിക വിദ്യാഭ്യാസം (ഏഴാം STD വരെ) സെക്കൻഡറി വിദ്യാഭ്യാസം (പത്താം STD വരെ) സീനിയർ സെക്കൻഡറി വിദ്യാഭ്യാസം (ഹയർ സെക്കൻഡറി) ബിരുദവും അതിനുമുകളിലും	0 1 2 3 4	EDU
6.	നിങ്ങളുടെ ഇപ്പോഴത്തെ തൊഴിൽ എന്താണ്?	മീൻ പിടിക്കുന്നു മത്സ്യത്തിന്റെ വിൽപന/വിപണനം വല നെയ്യുന്നു മത്സ്യം/മത്സ്യവുമായി ബന്ധപ്പെട്ട ഉൽപ്പന്നങ്ങൾ തൊലി കളയുന്നു മത്സ്യ അച്ചാർ നിർമ്മാണ വ്യവസായം മറ്റുള്ളവ	0 1 2 3 4 ദയവായി വ്യക്തമാക്കുക	OCCU
7.	മത്സ്യബന്ധനത്തിലോ മത്സ്യബന്ധ			WORKINGSINCE

	നവുമായി ബന്ധപ്പെട്ട പ്രവർത്തനങ്ങളിലോ നിങ്ങൾ എത്ര കാലമായി ഏർപ്പെട്ടിരിക്കുന്നു?			
8.	നിങ്ങൾ ഒരു ദിവസം ശരാശരി എത്ര മണിക്കൂർ ജോലി ചെയ്യുന്നു?	< 8 മണിക്കൂർ > 8 മണിക്കൂർ	0 1	WORKINGDURATION
9.	വൈവാഹിക നില:	വിവാഹിതൻ അവിവാഹിതൻ വിധവ വേർപിരിഞ്ഞു മറ്റുള്ളവ	0 1 2 4 ദയവായി വ്യക്തമാക്കുക	MARITAL
10.	കുട്ടികളുടെ എണ്ണം:			CHILDRENS
C.	**സാമ്പത്തിക നില കണക്കാക്കുന്നു**			
11.	നിങ്ങളുടെ റേഷൻ	മഞ്ഞ കാർഡ്	0	RATIONCARD

	കാർഡിന്റെ നിറം എന്താണ്?	പിങ്ക് കാർഡ് നീല കാർഡ് വെള്ള കാർഡ്	1 2 3	
12.	കുടുംബത്തിൽ വരുമാനമുള്ള എത്ര അംഗങ്ങളുണ്ട്?			EARNINGMEMBER
13.	കഴിഞ്ഞ മാസത്തെ മൊത്തം കുടുംബ വരുമാനം എത്രയാണ്?			INCOME
D.	**പങ്കെടുക്കുന്നയാളുടെ ശീലങ്ങൾ മനസ്സിലാക്കുക**			
14.	നിങ്ങൾ നിലവിലോ പണ്ടോ ഏതെങ്കിലും തരത്തിൽ ഉള്ള പുകയില ഉപകരണങ്ങൾ ഉപയോഗിച്ചിട് ഉണ്ടോ? (പുകവലി, പുകയില്ലാത്ത പുകയില എന്നിവ)	ഉണ്ട് ഇല്ല	0 1	TOBACCOUSER

	(ഉത്തരം ‘ഉണ്ട്’ എന്ന് ആണെങ്കിൽ, ചോദ്യം നമ്പർ 14(എ)/14(ബി) എന്നതിലേക്ക് പോകുക. ‘ഇല്ല’ എന്നാണ് ഉത്തരമെങ്കിൽ, ചോദ്യ നമ്പർ 15-ലേക്ക് പോകുക.)			
14(a)	പങ്കെടുക്കുന്നയാളുടെ പുകവലി ശീലം:	ഒരിക്കലും പുകവലിച്ചിട്ടില്ല പണ്ട് പുകവലിച്ചിരുന്നു ഇപ്പോൾ പുക വലിക്കാറുണ്ട്	0 1 2	SMOKINGSTATS
14(b)	വെറ്റില, പാൻ പരാഗ്, ഹാൻസ്, അല്ലെങ്കിൽ മറ്റേതെങ്കിലും പുകയില്ലാ	ഒരിക്കലും ഉപയോഗിച്ചിട്ടില്ല പണ്ട് ഉപയോഗിച്ചിരുന്നു	0 1 2	CHEWTOBACCO

	ത്ത പുകയിലയുടെ ഉപയോഗം ഉണ്ടോ?	നിലവിൽ ഉപയോഗിക്കാറുണ്ട്		
15.	നിങ്ങൾ എത്ര തവണ മദ്യം അടങ്ങിയ പാനീയം കഴിക്കുന്നു?	ഒരിക്കലും കഴിച്ചിട്ട് ഇല്ല പ്രതിമാസം 2 അല്ലെങ്കിൽ 3 തവണ/ അതിൽ കുറവോ മാസത്തിൽ 2 അല്ലെങ്കിൽ 4 തവണ ആഴ്ചയിൽ 2 അല്ലെങ്കിൽ 3 തവണ ആഴ്ചയിൽ 4 തവണ അല്ലെങ്കിൽ കൂടുതൽ തവണ	0 1 2 3 4	ALCOHOL
16.	നിങ്ങൾ ഏതെങ്കിലും തരത്തിലുള്ള ശാരീരിക വ്യായാമം ചെയ്യാറുണ്ടോ?	70-150 മിനിറ്റ് നടത്തം ഒഴിവുസമയങ്ങളിൽ ഉള്ള നടത്തം യാത്രകൾ ചെയ്യാൻവേണ്ടി ഉള്ള നടത്തം ജോലിക്കു പോകുമ്പോൾ ഉള്ള നടത്തം കുറഞ്ഞ അല്ലെങ്കിൽ ഉയർന്ന തീവ്രതയുള്ള വ്യായാമങ്ങൾ.	0 1 2 3 4	PHYSICALACTIVITY
17.	നിങ്ങൾ പകൽ	ഉണ്ട്	0	NAP

	ഉറങ്ങാറുണ്ടോ? (ഉത്തരം “ഉണ്ട്” ആണെങ്കിൽ 17(എ) ലേക്ക് പോകുക. ‘ഇല്ല’ എന്നാണ് ഉത്തരമെങ്കിൽ ചോദ്യ നമ്പർ 18-ലേക്ക് പോകുക)	ഇല്ല	1	
17(a).	എത്ര സമയം? (മിനിറ്റുകളിൽ)			NAPTIME
E.	**പങ്കെടുക്കുന്നയാളുടെ ഭക്ഷണ ശീലങ്ങൾ മനസ്സിലാക്കുക**			
18.	നിങ്ങൾ എത്ര തവണ ഉണക്കിയ മത്സ്യം കഴിക്കുന്നു?	കഴിക്കാറില്ല ഒരു മാസത്തിൽ 2 അല്ലെങ്കിൽ 4 തവണ ആഴ്ചയിൽ 4 തവണയിൽ താഴെ ആഴ്ചയിൽ 4 തവണയിൽ കൂടുതൽ	0 1 2 3	DRYFISH
19.	നിങ്ങൾ എത്ര തവണ പപ്പടം കഴിക്കും?	കഴിക്കാറില്ല ഒരു മാസത്തിൽ 2 അല്ലെങ്കിൽ 4 തവണ	0 1 2 3	PAPPAD

		ആഴ്ചയിൽ 4 തവണയിൽ താഴെ ആഴ്ചയിൽ 4 തവണയിൽ കൂടുതൽ		
20.	നിങ്ങൾ എത്ര തവണ അച്ചാർ കഴിക്കും?	കഴിക്കാറില്ല ഒരു മാസത്തിൽ 2 അല്ലെങ്കിൽ 4 തവണ ആഴ്ചയിൽ 4 തവണയിൽ താഴെ ആഴ്ചയിൽ 4 തവണയിൽ കൂടുതൽ	0 1 2 3	PICKLE
21.	ഒരു സാധാരണ ആഴ്ചയിൽ, എത്ര ദിവസങ്ങളിലാണ് നിങ്ങൾ പഴങ്ങൾ കഴിക്കുന്നത്? (ഷോകാർഡ് ഉപയോഗിക്കുക) ഷോകാർഡിലെ ഏതെങ്കിലും പഴത്തെക്കുറിച്ച് ചിന്തിക്കാൻ പങ്കാളിയോട് ആവശ്യപ്പെടുക.	ദിവസങ്ങളുടെ എണ്ണം		FRUITDAY

	സാംസ്കാരികമോ മതപരമോ മറ്റ് സംഭവങ്ങളോ ഭക്ഷണക്രമത്തെ ബാധിക്കാത്ത ഒരു "സാധാരണ" ആഴ്ച എന്നാണ് സാധാരണ ആഴ്ച അർത്ഥമാക്കുന്നത്. (ഈ ചോദ്യത്തിന് ഉത്തരം ഉണ്ടെങ്കിൽ, 21 (എ)) ലേക്ക് പോകുക, ഉത്തരമില്ലെങ്കിൽ ചോദ്യം നമ്പർ 22 ലേക്ക് പോകുക)			
21(a).	ആ ദിവസങ്ങളിലൊന്നിൽ നിങ്ങൾ എത്ര പഴം കഴിക്കും?	സെർവിംഗുകളുടെ എണ്ണം		FRUITSERVING

	(ഷോകാർഡ് ഉപയോഗിക്കുക) പങ്കെടുക്കുന്നയാളോട് അയാൾക്ക്/ അവൾക്ക് എളുപ്പത്തിൽ ഓർക്കാൻ കഴിയുന്ന ഒരു ദിവസത്തെക്കുറിച്ച് ചിന്തിക്കാൻ ആവശ്യപ്പെടുക. സെർവിംഗ് സൈസുകൾക്കായി ഷോകാർഡ് കാണുക			
22.	ഒരു സാധാരണ ആഴ്ചയിൽ, എത്ര ദിവസങ്ങളിൽ നിങ്ങൾ പച്ചക്കറികൾ കഴിക്കും? (ഷോകാർഡ് ഉപയോഗിക്കുക) ഷോകാർഡിലെ ഏതെങ്കിലും	ദിവസങ്ങളുടെ എണ്ണം		VEGITABLE DAY

	പഴത്തെക്കുറിച്ച് ചിന്തിക്കാൻ പങ്കാളിയോട് ആവശ്യപ്പെടുക. സാംസ്കാരികമോ മതപരമോ മറ്റ് സംഭവങ്ങളോ ഭക്ഷണക്രമത്തെ ബാധിക്കാത്ത ഒരു "സാധാരണ" ആഴ്ച എന്നാണ് സാധാരണ ആഴ്ച അർത്ഥമാക്കുന്നത്. (ഈ ചോദ്യത്തിന് ഉത്തരം ഉണ്ടെങ്കിൽ, 22 (എ)) ലേക്ക് പോകുക, ഉത്തരമില്ലെങ്കിൽ ചോദ്യം നമ്പർ 23 ലേക്ക് പോകുക)			
22(a).	ആ ദിവസങ്ങളി	സെർവിംഗുകളുടെ എണ്ണം		VEGITABLE SERVING

	ലൊന്നിൽ നിങ്ങൾ എത്ര പച്ചക്കറികൾ കഴിക്കും? (ഷോകാർഡ് ഉപയോഗിക്കുക) പങ്കെടുക്കുന്നയാളോട് അയാൾക്ക്/ അവൾക്ക് എളുപ്പത്തിൽ ഓർക്കാൻ കഴിയുന്ന ഒരു ദിവസത്തെക്കുറിച്ച് ചിന്തിക്കാൻ ആവശ്യപ്പെടുക. (സെർവിംഗ് സൈസുകൾക്കായി ഷോകാർഡ് കാണുക.)			
23.	നിങ്ങൾ ഒരു ദിവസം ശരാശരി എത്ര കപ്പ് ചായ/കാപ്പി കുടിക്കും?			TEACOFFEE
F.	**ആരോഗ്യ അവസ്ഥയും ക്ലിനിക്കൽ പാരാമീറ്ററുകളും**			

24.	ഏതെങ്കിലും ഡോക്ടറോ മെഡിക്കൽ പ്രൊഫഷണലോ താഴെ പറയുന്ന ഏതെങ്കിലും അവസ്ഥയിൽ നിങ്ങളെ കണ്ടെത്തിയിട്ടുണ്ടോ? (നിങ്ങൾക്ക് ഈ നിബന്ധനകളിൽ ഏതെങ്കിലും ഉണ്ടെങ്കിൽ, ചോദ്യം നമ്പർ 24(എ)) എന്നതിലേക്ക് പോകുക. ഉത്തരം 'ഇല്ല' ആണെങ്കിൽ, ചോദ്യ നമ്പർ 25-ലേക്ക് പോകുക)	ഹൈപ്പർടെൻഷൻ പ്രമേഹം വിട്ടുമാറാത്ത ശ്വാസകോശ സംബന്ധമായ അസുഖങ്ങൾ വിട്ടുമാറാത്ത വൃക്കരോഗം വിട്ടുമാറാത്ത ധമനിയുടെ രോഗം സെറിബ്രോവാസ്കുലർ അപകടങ്ങൾ ഹൃദയസ്തംഭനം തിമിരം ഡിമെൻഷ്യ കാൻസർ വിഷാദം ഉത്കണ്ഠ	0 1 2 3 4 5 6 7 8 9 10 11	CHRONICCONDITION
24(a).	മുകളിൽ പറയുന്ന അവസ്ഥകളിൽ ഏതിനെങ്കിലും മരുന്ന്	ഉണ്ട് ഇല്ല	0 1	TAKINGMED

	നിങ്ങൾ കഴിക്കുന്നുണ്ടോ? (ഉത്തരം “ഉണ്ട്” ആണെങ്കിൽ ചോദ്യം നമ്പർ 24 (ബി) ലേക്ക് പോകുക. ‘ഇല്ല’ എന്നാണ് ഉത്തരമെങ്കിൽ ചോദ്യ നമ്പർ 25-ലേക്ക് പോകുക)			
24(b).	നിങ്ങൾ സാധാരണയായി കഴിക്കുന്ന എല്ലാ മരുന്നുകളും എനിക്ക് കാണാൻ കഴിയുമോ?	ആൽഫ/ബീറ്റ അഗോണിസ്റ്റ് ഷോർട്ട് ആക്ടിംഗ് ബീറ്റ 2 അഗോണിസ്റ്റ് (ബ്രോങ്കോഡിലേറ്ററുകൾ) ആൻജിയോടെൻസിൻ പരിവർത്തനം ചെയ്യുന്ന എൻസൈം ഇൻഹിബിറ്ററുകൾ ബീറ്റാ ബ്ലോക്കറുകൾ ബിഗ്വാനൈഡുകൾ അസറ്റൈൽകോളിനെസ്റ്ററേസ് ഇൻഹിബിറ്ററുകൾ	0 1 2 3 4 5 6 7	MEDICATION

		സെറോടോണിൻ നോർഎപിനെഫ്രിൻ റീഅപ് ടേക്ക് ഇൻഹിബിറ്റർ സെലക്ടീവ് സെറോടോണിൻ റീഅപ് ടേക്ക് ഇൻഹിബിറ്റർ ഒപിയോയിഡ് വേദനസംഹാരികൾ ആൽഫ ബ്ലോക്കറുകൾ ഹ്രസ്വകാല വിരുദ്ധ ബാഹ്യാവിഷ്ക്കാര മരുന്നുകൾ ദീർഘകാല പ്രതിരോധ മരുന്നുകൾ ഉത്തേജകങ്ങൾ	8 9 10 11 12	
E.	**പിറ്റ്സ്ബർഗ് ഉറക്ക ഗുണനിലവാര സൂചിക** (കഴിഞ്ഞ ഒരു മാസത്തിൽ മാത്രം നിങ്ങളുടെ പതിവ് ഉറക്കശീലവുമായി ബന്ധപ്പെട്ടതാണ് ഇനി പറയുന്ന ചോദ്യങ്ങൾ. കഴിഞ്ഞ മാസത്തിലെ മിക്കവാറുമുള്ള രാപകലുകൾ നിങ്ങളുടെ ഉറക്കശീലം എങ്ങനെയായിരുന്നു എന്ന് സൂചിപ്പിക്കുന്ന കൃത്യമായ മറുപടിയാണ് നൽകേണ്ടത്.)			
25.	കഴിഞ്ഞ ഒരു മാസത്തിനിടയിൽ, നിങ്ങൾ സാധാരണ			BEDTIME

	യായി രാത്രി ഉറങ്ങാൻ പോകുന്ന സമയം എത്രയാണ് ?			
26.	കഴിഞ്ഞ ഒരു മാസത്തിനി ടയിൽ, എല്ലാ രാത്രിയിലും ഉറക്കത്തി ലേക്ക് പോകാൻ നിങ്ങൾക്ക് എത്ര സമയം (മിനിറ്റിൽ പറയുക) വേണ്ടിവ ന്നു?	15 മിനിറ്റിൽ കുറവ് 16 -30 മിനിറ്റ് 31 -60 മിനിറ്റ് 60 മിനിറ്റിൽ കൂടുതൽ	0 1 2 3	SLEEPLATE NCY
27.	കഴിഞ്ഞ ഒരു മാസത്തിനി ടയിൽ, നിങ്ങൾ സാധാരണ മായി രാവിലെ എഴുന്നേറ്റ സമയം എത്രയാണ്?			WAKEUPTI ME
28	കഴിഞ്ഞ ഒരു മാസത്തിനി ടയിൽ, രാത്രിയിൽ എത്ര മണിക്കൂറി ൽ യഥാർത്ഥ	7 മണിക്കൂറിൽ കൂടുതൽ 6 -7 മണിക്കൂർ 5 -6 മണിക്കൂർ 5 മണിക്കൂറിൽ കുറവ്	0 1 2 3	SLEEPDURA TION

	ഉറക്കം നിങ്ങൾക്ക് ലഭിച്ചു ?			
29.	കഴിഞ്ഞ ഒരു മാസത്തിനിടയിൽ, നിങ്ങൾ എത്ര തവണ ഉറങ്ങാൻ ബുദ്ധിമുട്ടി……			
A	30 മിനിറ്റിനുള്ളിൽ ഉറങ്ങാൻ കഴിയുന്നില്ല	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	SLEEPWITHIN30MIN
B	രാത്രിയോ അതിരാവിലയോ ഉണരുന്നു	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	WAKEUP
C	ബാത്ത് റൂം ഉപയോഗിക്കാൻ എഴുന്നേൽക്കുന്നു	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ	0 1 2 3	USINGBATHROOM

		ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ		
D	സുഖകരമായി ശ്വസിക്കാൻ കഴിയുന്നില്ല	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	BREATHING DIFFICULTY
E	ചുമയ്ക്കുന്നു അല്ലെങ്കിൽ ഉറക്കെ കൂർക്കം വലിക്കുന്നു	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	SNORING
F	വളരെ തണുപ്പ് അനുഭവപ്പെടുന്നു	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	FEELINGCOLD
G	വളരെ ചൂട് അനുഭവപ്പെടുന്നു	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ	0 1 2 3	FEELINGHOT

		ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ		
H	ദുഃസ്വപ്നങ്ങൾ ഉണ്ടാകുന്നു	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	BADDREAMS
I	വേദന അനുഭവപ്പെടുന്നു	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	PAIN
J	ഉറക്കത്തിൽ നിങ്ങൾക്ക് മറ്റെന്തെങ്കിലും പ്രശ്നങ്ങൾ ഉണ്ടെങ്കിൽ, ദയവായി വിവരിക്കുക			
30	കഴിഞ്ഞ മാസത്തിൽ ഉറക്കത്തെ സഹായിക്കുന്നതിന് എത്ര തവണ നിങ്ങൾ മരുന്ന് കഴിച്ചിട്ടുണ്ട്?	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	SLEEPMEDICATION

	(കുറുപ്പടി ഉള്ളതും ഇല്ലാത്തതും)			
31	കഴിഞ്ഞ ഒരു മാസത്തിനിടയിൽ വാഹനമോടിക്കുമ്പോഴും ഭക്ഷണം കഴിക്കുമ്പോഴും സാമൂഹിക പ്രവർത്തനങ്ങളിൽ ഏർപ്പെടുമ്പോഴും നിങ്ങൾക്ക് എത്ര തവണ ഉണർന്നിരിക്കുന്നതിനുള്ള ബുദ്ധിമുട്ട് ഉണ്ടായിട്ട് ഉണ്ട് ?	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	DAYTIMEDYSFUNCTION
32	കഴിഞ്ഞ ഒരു മാസത്തിനിടയിൽ, നിങ്ങൾക്ക് കാര്യങ്ങൾ ചെയ്യാൻ വേണ്ടത്ര ഉൻമേഷം നിലനിർത്തുന്നതിൽ പ്രശ്നങ്ങൾ	കഴിഞ്ഞ ഒരു മാസം ഇല്ല രണ്ടാഴ്ചയിൽ ഒരിക്കൽ ആഴ്ചയിൽ ഒന്നോ രണ്ടോ തവണ ആഴ്ചയിൽ മൂന്നോ അതിലധികമോ തവണ	0 1 2 3	KEEPINGENTHUSIASM

	നേരിട്ടിരുന്നോ ?			
33	കഴിഞ്ഞ ഒരു മാസത്തിനിടയിൽ, നിങ്ങളുടെ ഉറക്കതിന്റെ ഗുണനിലവാരം മൊത്തത്തിൽ നിങ്ങൾ എങ്ങനെ വിലയിരുത്തുന്നു	വളരെ നല്ലത് സാമാന്യം നല്ലത് സാമാന്യം മോശം വളരെ മോശം	0 1 2 3	SLEEPQUALITY
34.	നിങ്ങൾക്ക് സ്വന്തമായി ഒരു സ്മാർട്ട് ഫോൺ ഉണ്ടോ? (ഉത്തരം ‘ഉണ്ട് ’ എന്ന് ആണെങ്കിൽ ചോദ്യം നമ്പർ 34 (എ) ലേക്ക് പോകുക. ‘ഇല്ല’ എന്നാണ് ഉത്തരമെങ്കിൽ, ചോദ്യം നമ്പർ 35-ലേക്ക് പോകുക)	ഉണ്ട് ഇല്ല	0 1	SMARTPHONE
34(a)	ഉറങ്ങാൻ പോകുന്നതി	1 മണിക്കൂർ മുമ്പ്	0	BEFORESLEEPPHONE

	ന് എത്ര സമയം മുമ്പ് നിങ്ങൾ സ്മാർട്ട് ഫോൺ ഉപയോഗിക്കുന്നത് നിർത്തുന്നു?	30 മിനിറ്റ് മുമ്പ് 15 മിനിറ്റ് മുമ്പ് ഞാൻ ഉറങ്ങുന്നത് വരെ	1 2 3	
35	നിങ്ങൾക്ക് സ്വന്തമായി ഒരു ടിവി ഉണ്ടോ? (ഉത്തരം 'ഉണ്ട്' എന്ന് ആണെങ്കിൽ, ചോദ്യം നമ്പർ 35(എ)) ലേക്ക് പോകുക. ഉത്തരം 'ഇല്ല' ആണെങ്കിൽ, ചോദ്യ നമ്പർ 36-ലേക്ക് പോകുക)	ഉണ്ട് ഇല്ല	0 1	TV
35(a)	ഉറങ്ങാൻ പോകുന്നതിന് എത്ര സമയം മുമ്പ്, നിങ്ങൾ ടിവി കാണുന്നത് നിർത്തുന്നു?	1 മണിക്കൂർ മുമ്പ് 30 മിനിറ്റ് മുമ്പ് 15 മിനിറ്റ് മുമ്പ്	0 1 2	BEFORESLEEPTV

		ഞാൻ ഉറങ്ങുന്നത് വരെ			3	
H.	ആന്ത്രോപോമെട്രിക് അളവുകൾ					
35.	ഉയരം:	(സെന്റീമീറ്ററിൽ cm)				HEIGHT
36.	ഭാരം:	(കിലോഗ്രാമിൽ kg)				WEIGHT
37.	ബി .എം .ഐ)					BMI
38.	കേന്ദ്ര ഭാഗത്തെ പൊണ്ണത്തടി അളവ്:					CENTRALO BESITY
I	രക്തസമ്മർദ്ദം					
39.	പങ്കെടുക്കുന്ന ആളുടെ രക്തസമ്മർദ്ദം: (ഇലക്ട്രോണിക് രക്തസമ്മർദ്ദം കണ്ടെത്തുന്ന ഉപകരണം ഉപയോഗിച്ച്)	സിസ്റ്റോളിക് രക്തസമ്മർദ്ദം	ഡയസ്റ്റോളിക് രക്തസമ്മർദ്ദം	ശരാശരി രക്തസമ്മർദ്ദം		BP
		1				
		2 3				

FOR VERIFICATION PURPOSE ONLY FOR THE PRINCIPAL INVESTIGATOR:

SLNO	PURPOSE	CLASS OF MEDICATION	COMMON NAMES
1.	Cold and allergy decongestants	Alpha/beta agonist	Phenylephrine (Sudafed PE) Pseudoephedrine (Sudafed)
2.	Asthma medication	Short acting beta 2 agonist (bronchodilators)	Pirbuterol (Maxair Autohaler) Albuterol (Proventil HFA, ProAir and Ventolin HFA) Levalbuterol (Xopenex)
3.	Blood pressure medication	Angiotensin-converting enzyme (ACE) inhibitors: Beta blockers:	Benazepril(Lotensin), Enalapril (Vasotec), Lisinopril (Prinivil), Quinapril (Accupril), Ramipril (Altace) Propranolol (Inderal) Nadolol (CorGard) Pindolol (Visken), labetalol (Normodyne) Penbutolol (Levatol) Sotalol (Betapace) Carvedilol (Coreg)
4.	Diabetic medication	Biguanides	Metformin (Glucophage)
5.	Memory medication	Acetylcholinesterase inhibitors	Donepezil (Aricept) Galantamine (Razadyne) Rivastigmine (Exelon)
6.	Mood and anxiety medication	Selective serotonin reuptake inhibitor Serotonin norepinephrine reuptake inhibitor	Fluoxetine (Prozac) Citalopram (Celexa), Escitalopram (Lexapro), Sertraline (Zoloft), Paroxetine (Paxil), Fluvoxamine (Luvox) Venlafaxine (Effexor), Desvenlafaxine (Pristiq), Milnacipran (Savella),

			Levomilnacipran (Fetzima), Duloxetine (Cymbalta)
7.	Pain medications	Opioid pain relievers	fentanyl (Duragesic), morphine (Avinza), hydrocodone (Norco), oxycodone (OxyContin), oxymorphone (Opana) and tramadol (Ultram)
8.	Prostrate medication	Alpha-blockers	Alfuzosin (Uroxatral), Doxazosin (Cardura), Prazosin (Minipress), Silodosin (Rapaflo), Terazosin (Hytrin) and Tamsulosin (Flomax)
9.	Stimulants	Stimulants	Amphetamine-dextroamphetamine (Adderall), Methylphenidate (Concerta), Dextroamphetamine (Dexedrine), Dexmethylphenidate (Focalin), Methylphenidate (Ritalin), Lisdexamfetamine (Vyvanse)
10.	Steroid	Short-term anti-inflammatory medications Long-term immunosuppressive agents	Prednisone (Deltasone), Methyl-prednisolone (Medrol), Dexamethasone (Decadron)

PARTICIPANT INFORMATION SHEET

Greetings. I am Dr. Vismaya Shajahan, currently enrolled in the Master of Public Health program at the Achutha Menon Centre for Health Sciences Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram. As part of my academic research, I am surveying to assess the sleep quality among the fishing community in Kollam district. My research thesis is titled **"Assessing the sleep quality among the fishing community in Kollam district, Kerala."**

Objectives:
The study aims to assess the prevalence of poor sleep quality among the fishing community in Kollam district, Kerala, and to identify the sociodemographic and clinical factors associated with the poor sleep quality among them.

Why such a study is conducted in the fishing community:
As you know, good quality sleep is necessary to maintain the circadian rhythm and cognitive performance; not only that it is highly essential to maintain normal physiology and to enhance memory. Good quality sleep is considered an important aspect, that maintains the quality of life, and its deprivation may result in a high risk of coronary heart disease, high blood pressure, obesity, and stroke. The Fisher communities are the neglected and marginalised group who are more prone to have poor sleep quality due to their mode of job, working environment, long working hours, and extensive manual labour.

Requesting you to take part in the study:
I am inviting you to be part of this research survey work. Before you participate in this survey, you are free to discuss this survey with any one of your concerns. This consent form may contain the words that you would feel difficult to understand. If you find anything difficult to understand, you may stop me in between, and I will take time to clarify your doubts before moving ahead. If you have any questions later, you may ask me or contact the member secretary of the Institutional Ethics Committee.
The research involves your participation by providing general information. It may take 30-35 minutes, and the measurements such as height, weight, central obesity, and blood pressure (using the electronic BP apparatus).

Voluntary participation:
The permission for the study has been obtained from the DDP (Deputy Director Panchayat, Kollam). Your participation in this survey is entirely voluntary. It is your choice whether to participate in the study or not. The choice that you make is in no way going to affect you in any manner. If you prefer quitting the study during or after the survey, you are free to do so. Your information won't be revealed to anyone. No incentives will be provided for taking part in the study.

Risk:
There is no risk anticipated in the study. You may feel a little difficulty while assessing some parameters, such as height, weight, central obesity, and blood pressure. As these measures are kept strictly confidential, they won't harm you in any manner, and these measurements will be taken in the presence of any of your family members if possible.

Benefits:

There will not be any immediate direct benefit for you, other than knowing your height, weight, central obesity and blood pressure. But your participation would help me to assess the prevalence of poor sleep quality among the fishing community; and to know the sociodemographic and clinical factors associated with poor sleep quality. This would add up to future research work, which would help in creating awareness about the sleep quality among the population or help them in seeking medical care for those who are suffering from poor-quality sleep.

Confidentiality:
I will not be sharing the information about you with anyone else. The information that I collect from you during the survey will be kept private. There is a minimal way to recognize a participant as your name or address are not collected, instead participant ID will be collected.

Funding:
I am doing this research at my own expense.

Who to contact:
If you have any questions, you can ask me now or later. If you wish to ask anything in private about the research, you may contact any of the following:

(Dr. Vismaya Shajahan ,8951070775, vismayashajahan@sctimst.ac.in)
Dr. Srinivas G, Member Secretary, I E C, SCTIMST, & Scientist - G, Department of Biochemistry, SCTIMST, (email iec.mem.sec@sctimst.ac.in)

പഠനത്തെ കുറിച്ചുള്ള വിവരണം

നമസ്കാരം. ഞാൻ ഡോ. വിസ്മയ ഷാജഹാൻ ആണ്, നിലവിൽ തിരുവനന്തപുരത്തെ ശ്രീചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസസ് ആൻഡ് ടെക്നോളജിയിലെ അച്യുതമേനോൻ സെൻറർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസിൽ മാസ്റ്റർ ഓഫ് പബ്ലിക് ഹെൽത്ത് പ്രോഗ്രാമിൽ എൻറോൾ ചെയ്തിട്ടുണ്ട്. എന്റെ അക്കാദമിക് ഗവേഷണത്തിന്റെ ഭാഗമായി, " കേരളത്തിലെ കൊല്ലം ജില്ലയിലെ മത്സ്യത്തൊഴിലാളികളുടെ ഉറക്കത്തിന്റെ ഗുണനിലവാരം വിലയിരുത്തുന്നു" എന്ന തലക്കെട്ടിൽ ഞാൻ ഒരു സർവേ നടത്തുന്നു.

ലക്ഷ്യങ്ങൾ:

കേരളത്തിലെ കൊല്ലം ജില്ലയിലെ മത്സ്യത്തൊഴിലാളികൾക്കിടയിലെ ഉറക്കത്തിന്റെ നിലവാരം വിലയിരുത്തുകയും അവർക്കിടയിലെ ഉറക്കത്തിന്റെ ഗുണനിലവാരവുമായി ബന്ധപ്പെട്ട സാമൂഹിക-ജനസംഖ്യാശാസ്ത്രപരവും ആരോഗ്യപരവുമായ ഘടകങ്ങൾ തിരിച്ചറിയുകയും ചെയ്യുക എന്നതാണ് പഠനത്തിന്റെ ലക്ഷ്യം.

എന്തുകൊണ്ടാണ് മത്സ്യത്തൊഴിലാളി ജനസംഖ്യയിൽ അത്തരമൊരു പഠനം നടത്തുന്നത്:

മൽസ്യബന്ധനം പൊതുവെ ദൈർഘ്യമേറിയതും വെല്ലുവിളികൾ നിറഞ്ഞതുമാണ്, എല്ലായിപ്പോഴും കൃത്യമായ ഉറക്കമോ വേണ്ടത്ര വിശ്രമമോ കിട്ടാനുള്ള സാധ്യത കുറവാണ്. തൊഴിൽ രീതി, തൊഴിൽ അന്തരീക്ഷം, ദൈർഘ്യമേറിയ ജോലി, കഠിനമായ ശാരീരിക അദ്ധ്വാനം എന്നിവ ഓരോ വ്യക്തിയുടേയും ഉറക്കത്തിന്റെ നിലവാരത്തെ സ്വാധീനിക്കുന്ന ഘടകങ്ങളാണ്. ഈ ഘടകങ്ങൾ എല്ലാം തന്നെ മൽസ്യത്തൊഴിലാളികളിൽ കൂടുതലായി കാണപ്പെടുന്നു. മനുഷ്യ ശരീരത്തിൻറെ ഉപാപചയ പ്രവർത്തനത്തിനും മാനസിക ആരോഗ്യത്തിനും ഉറക്കം അത്യന്താപേക്ഷികമാണ്. അതിന്റെ അഭാവം പലവിധ അസുഖങ്ങൾക്കു കാരണമാകും, ഹൃദ്രോഗം, ഉയർന്ന രക്തസമ്മർദ്ദം, സ്ട്രോക്ക്, പൊണ്ണത്തടി എന്നിവ അവയിൽ ചിലതാണ്.

പഠനത്തിൽ പങ്കെടുക്കാൻ നിങ്ങളോട് അഭ്യർത്ഥിക്കുന്നു:

ഈ സർവേ പ്രവർത്തനത്തിന്റെ ഭാഗമാകാൻ ഞാൻ നിങ്ങളെ ക്ഷണിക്കുന്നു. ഈ സർവേയിൽ പങ്കെടുക്കുന്നതിന് മുമ്പ്, സർവേയെക്കുറിച്ച് നിങ്ങളുടെ ആശങ്ക ആരുമായിട്ടു വേണമെങ്കിലും

ചർച്ച ചെയ്യാം. ഈ സമ്മത പത്രത്തിൽ ഒപ്പ് ഇടുന്നതിനു മുൻപ് അതിൻറെ ഉള്ളടക്കം വ്യക്തമായി മനസ്സിലാക്കുകയും, സർവ്വേയുമായി ബന്ധപ്പെട്ട സംശയങ്ങൾ ദുരീകരിക്കുകയും ചെയ്യേണ്ടതാണ്. സംശയ ദുരീകരണത്തിനായി എന്നെയോ, അല്ലെങ്കിൽ ഇൻസ്റ്റിറ്റ്യൂഷണൽ എത്തിക്സ് കമ്മിറ്റിയുടെ മെമ്പർ സെക്രട്ടറിയെയോ ബന്ധപ്പെടാം.
പൊതുവായ വിവരങ്ങൾ നൽകിക്കൊണ്ട് സർവേയിൽ നിങ്ങളുടെ പങ്കാളിത്തം പ്രതീക്ഷിക്കുന്നു. ഇതിന് 30-35 മിനിറ്റ് എടുത്തേക്കാം, ഉയരം, ഭാരം, കേന്ദ്ര ഭാഗത്തെ പൊണ്ണത്തടി, രക്തസമ്മർദ്ദം (ഇലക്ട്രോണിക് ബിപി ഉപകരണം ഉപയോഗിച്ച്) തുടങ്ങിയ അളവുകൾ നിങ്ങളിൽ നിന്ന് ശേഖരിക്കും.

സ്വമേധയാ ഉള്ള പങ്കാളിത്തം:

ഈ സർവേയിൽ നിങ്ങളുടെ പങ്കാളിത്തം പൂർണ്ണമായും സ്വമേധയാ ഉള്ളതാണ്. പഠനത്തിൽ പങ്കെടുക്കണോ വേണ്ടയോ എന്നത് നിങ്ങളുടെ ഇഷ്ടമാണ്. നിങ്ങൾ എടുക്കുന്ന തീരുമാനം ഒരു തരത്തിലും നിങ്ങളെ ബാധിക്കാൻ പോകുന്നില്ല. നിങ്ങള്ക്ക് ഏതെങ്കിലും ചോദ്യങ്ങൾക്ക് ഉത്തരം തരാൻ ബുദ്ധിമുട്ട് ഉണ്ടെങ്കിൽ നിങ്ങള്ക്ക് അത് തുറന്നു പറയാവുന്നതാണ്. നിങ്ങള്ക്ക് ഈ സർവെയുടെ മധ്യത്തിൽ വെച്ച് എന്തെങ്കിലും ബുദ്ധിമുട്ട് അനുഭവപ്പെട്ടാൽ, ആവശ്യമെങ്കിൽ നിങ്ങള്ക്ക് ഈ സർവെ ഉപേക്ഷിക്കാവുന്നതാണ്. പഠനത്തിനുള്ള അനുമതി കൊല്ലം ഡിഡിപി (ഡെപ്യൂട്ടി ഡയറക്ടർ പഞ്ചായത്ത്) യിൽ നിന്ന് വാങ്ങിയിട്ടുണ്ട്. നിങ്ങളുടെ വിവരങ്ങൾ ആരോടും വെളിപ്പെടുത്തില്ല. പഠനത്തിൽ പങ്കെടുക്കുന്നതിന് പ്രോത്സാഹനങ്ങൾ നൽകുന്നതല്ല.

അപകടസാധ്യത:

പഠനത്തിന് ഒരു രീതിയിലുമുള്ള അപകടസാധ്യത ഇല്ല. ഉയരം, ഭാരം, കേന്ദ്ര ഭാഗത്തെ പൊണ്ണത്തടി, രക്തസമ്മർദ്ദം തുടങ്ങിയ അളവുകൾ എടുക്കുമ്പോൾ നിങ്ങൾക്ക് അൽപ്പം ബുദ്ധിമുട്ട് അനുഭവപ്പെട്ടേക്കാം, സാധ്യമെങ്കിൽ നിങ്ങളുടെ കുടുംബാംഗങ്ങളുടെ സാന്നിധ്യത്തിൽ ഈ അളവുകൾ എടുക്കും. നിങ്ങളിൽ നിന്ന് ശേഖരിക്കുന്ന വിവരങ്ങൾ കർശനമായും രഹസ്യമായി സൂക്ഷിക്കുന്നതിനാൽ, അവ നിങ്ങളെ ഒരു തരത്തിലും ബാധിക്കില്ല.

പ്രയോജനങ്ങൾ:

നിങ്ങൾക്ക് ഉടനടി നേരിട്ടുള്ള നേട്ടമൊന്നും ഉണ്ടാകില്ല, എന്നിരുന്നാലും നിങ്ങളുടെ പങ്കാളിത്തം മത്സ്യത്തൊഴിലാളി

സമൂഹത്തിൽ ഉറക്കതിന്റെ നിലവാരം വിലയിരുത്താൻ എന്നെ സഹായിക്കും; ഉറക്കതിന്റെ ഗുണനിലവാരവുമായി ബന്ധപ്പെട്ട സോഷ്യോഡെമോഗ്രാഫിക്, ആരോഗ്യപരവുമായ ഘടകങ്ങൾ അറിയാനും ഇത് ഭാവിയിലെ ഗവേഷണ പ്രവർത്തനങ്ങൾക്കും കാരണമാകും.
ഇത് ജനങ്ങൾക്കിടയിൽ ഉറക്കത്തിന്റെ ഗുണനിലവാരത്തെക്കുറിച്ച് അവബോധം സൃഷ്ടിക്കുന്നതിന് സഹായിക്കും, അല്ലെങ്കിൽ മോശം ഉറക്കം അനുഭവിക്കുന്നവർക്ക് വൈദ്യസഹായം തേടാൻ അവരെ സഹായിക്കും.

രഹസ്യാത്മകത:

നിങ്ങളെക്കുറിച്ചുള്ള വിവരങ്ങൾ ഞാൻ മറ്റാരുമായും പങ്കിടില്ല. സർവേ സമയത്ത് നിങ്ങളിൽ നിന്ന് ഞാൻ ശേഖരിക്കുന്ന വിവരങ്ങൾ സ്വകാര്യമായി സൂക്ഷിക്കും. നിങ്ങളുടെ പേരോ മേൽവിലാസമോ ശേഖരിക്കുന്നതിന് പകരം, ഓരോരുത്തർക്കും ഐഡി തരുന്നത് പ്രാകാരം നിങ്ങളെ ഒരാൾ മനസ്സിലാക്കാൻ ഉള്ള സാധ്യത വളരെ കുറവാണ്.

ധനസഹായം:

ഈ പഠനം നടത്തുന്നതിനായി സാമ്പത്തിക സഹായങ്ങൾ ഒന്നും തന്നെ ഇല്ല

ആരെയാണ് ബന്ധപ്പെടേണ്ടത്:

നിങ്ങൾക്ക് എന്തെങ്കിലും ചോദ്യങ്ങളുണ്ടെങ്കിൽ, ഇപ്പോൾ അല്ലെങ്കിൽ പിന്നീട് എന്നോട് ചോദിക്കാം. ഗവേഷണത്തെക്കുറിച്ച് സ്വകാര്യമായി എന്തെങ്കിലും ചോദിക്കാൻ നിങ്ങൾ ആഗ്രഹിക്കുന്നുവെങ്കിൽ, ഇനി പറയുന്നവയിലേതിലെങ്കിലും നിങ്ങൾക്ക് ബന്ധപ്പെടാം:
(ഡോ. വിസ്മയ ഷാജഹാൻ ,8951070775, vismayashajahan@sctimst.ac.in)
ഡോ. ശ്രീനിവാസ് ജി, മെമ്പർ സെക്രട്ടറി, I E C, SCTIMST, & സയന്റിസ്റ്റ് - ജി, ബയോകെമിസ്ട്രി വകുപ്പ്, SCTIMST, (email iec.mem.sec@sctimst.ac.in).

INFORMED CONSENT FORM

I have been invited to participate in the research study titled "**Assessing the sleep quality among the fishing community in Kollam District, Kerala".**

I have read the information provided regarding the study, or it has been read to me**.** I have had the opportunity to ask questions about it, and the questions I have been asked have been answered satisfactorily.
I am aware that there is minimal risk in participating in the study.
I know I will not be incentivized for the participation.
I understand my personal information will remain confidential.
I know that I can withdraw my consent at any point of the study
I consent voluntarily to be a participant in this study.
I understand there is no immediate direct benefit in the study; other than knowing my blood pressure, height, weight and central obesity.
I understand that I may be linked/ directed to the local health facility if I am found to have any parameters requiring immediate care.

Participant ID: **Name of the participant:**
Mobile Number: **Signature**

Place:
Date :

I confirm that the participant was allowed to ask questions about the study, and all the questions asked have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Name of the Researcher……

Date…….

Signature of the Researcher……

Name and signature of witness:…….

സമ്മത പത്രം

“കേരളത്തിലെ കൊല്ലം ജില്ലയിലെ മത്സ്യത്തൊഴിലാളികൾക്കിടയിലുള്ള മോശം ഉറക്കത്തിന്റെ ഗുണനിലവാരം വിലയിരുത്തൽ" എന്ന തലക്കെട്ടിലുള്ള ഗവേഷണത്തിൽ പങ്കെടുക്കാൻ എന്നെ ക്ഷണിച്ചു.

പഠനവുമായി ബന്ധപ്പെട്ട് നൽകിയിരിക്കുന്ന വിവരങ്ങൾ ഞാൻ വായിച്ചിട്ടുണ്ട്, അല്ലെങ്കിൽ അത് എനിക്ക് വായിച്ചുതന്നിട്ടുണ്ട്. അതിനെക്കുറിച്ച് ചോദ്യങ്ങൾ ചോദിക്കാൻ എനിക്ക് അവസരം ലഭിച്ചു, എന്നോട് ചോദിച്ച ചോദ്യങ്ങൾക്ക് എനിക്ക് തൃപ്തികരമായ ഉത്തരം ലഭിച്ചു.
പഠനത്തിൽ പങ്കെടുക്കുന്നതിൽ അപകടസാധ്യതയില്ലെന്ന് എനിക്കറിയാം.
എന്റെ രക്തസമ്മർദ്ദം, ഉയരം, ഭാരം, കേന്ദ്ര ഭാഗത്തെ പൊണ്ണത്തടി എന്നിവ അറിയുന്നതല്ലാതെ പഠനത്തിൽ നേരിട്ടുള്ള ഒരു പ്രയോജനവും ഇല്ലെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു.
എന്റെ സ്വകാര്യ വിവരങ്ങൾ രഹസ്യമായി തുടരുമെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു.
പഠനത്തിന്റെ ഏത് ഘട്ടത്തിലും എനിക്ക് എന്റെ സമ്മതം പിൻവലിക്കാൻ കഴിയുമെന്ന് എനിക്കറിയാം.

ഈ പഠനത്തിൽ പങ്കാളിയാകാൻ ഞാൻ സ്വമേധയാ സമ്മതിക്കുന്നു.
ഉടനടി പരിചരണം ആവശ്യമായ എന്തെങ്കിലും പാരാമീറ്ററുകൾ എനിക്കുണ്ടെന്ന് കണ്ടെത്തിയാൽ, പ്രാദേശിക ആരോഗ്യ സ്ഥാപനവുമായി എന്നെ ബന്ധപ്പെടുത്തി തരുമെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു.

പങ്കെടുക്കുന്ന ആളുടെ ഐഡി:

പങ്കെടുക്കുന്നയാളുടെ പേര്:

മൊബൈൽ നമ്പർ:

ഒപ്പ്:

സ്ഥലം:
തീയതി:

പഠനത്തെ കുറിച്ച് ചോദ്യങ്ങൾ ചോദിക്കാൻ അനുവദിച്ചിട്ടുണ്ടെന്നും ചോദിച്ച എല്ലാ ചോദ്യങ്ങൾക്കും കൃത്യമായും എന്റെ കഴിവിന്റെ

പരമാവധി ഉത്തരം നൽകിയിട്ടുണ്ടെന്നും ഞാൻ സ്ഥിരീകരിക്കുന്നു. സമ്മതം നൽകാൻ വ്യക്തിയെ നിർബന്ധിച്ചിട്ടില്ലെന്നും, സമ്മതം സ്വതന്ത്രമായും സ്വമേധയാലും നൽകിയതാണെന്നും ഞാൻ സ്ഥിരീകരിക്കുന്നു.

ഗവേഷകൻറെ പേര്.....

തീയതി.....

സാക്ഷിയുടെ പേരും ഒപ്പും .....
ഗവേഷകൻറെ ഒപ്പ്.....

श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेन्द्रम
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SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
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Institutional Ethics Committee

CDSCO Registration No: ECR/189/Inst/KL/2013/RR-21
DHR Registration No:EC/NEW/INST/2022/2775

SCT/IEC/2159/DECEMBER/2023 11.01.2024

Dr. Vismaya Shajahan
MPH Student, AMCHSS
SCTIMST, Thiruvananathapuram

Dear Dr. Vismaya Shajahan,

The Institutional Ethics Committee held on 30th December, 2023, reviewed and discussed your application to conduct the study titled "**ASSESSING THE SLEEP QUALITY AMONG THE FISHING COMMUNITY IN KOLLAM DISTRICT, KERALA (IEC /2159)** "

Principal Investigator	Dr. Vismaya Shajahan , MPH Student, AMCHSS, SCTIMST
Co-Principal Investigator(s)	Dr. Srikant. A, Additional Professor, AMCHSS, SCTIMST
Duration of the study	6 months

The following members of the Ethics Committee were present at the meeting held on 30th December, 2023

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Smt. Sathi Nair	MA (English Literature)	Female	Lay Person	No
2.	Dr. Kala Kesavan P	MBBS,MD	Female	Basic Medical Scientist	No
3.	Adv. Priya Kaimal	LLM, MBL	Female	Legal Expert	No
4.	Dr. P. Manickam	BSMS, MSc (Epid).,PhD	Male	Health Science Expert/ Social Scientist	No
5.	Dr. Christina George	MD Psychiatry	Female	Clinician	No
6.	Dr. Narayanan Namboodiri. K K	MBBS,MD,DM	Male	Clinician	Yes
7.	Dr. Biju Soman	MBBS,MD, DPH, MSc, DLSHTM	Male	Basic Medical Scientist	Yes

The following documents were reviewed:

Original submission

1. Checklist Form
2. Covering letter addressed to the Chairman, IEC, SCTIMST dated 30.11.2023
3. Responses /amendments made based on the Reviewer's comments
4. IEC Application Form
5. Declaration Form
6. Research Proposal
7. Participant Information Sheet in English and Malayalam
8. Informed Consent Form in English and Malayalam
9. Interview Schedule in English and Malayalam
10. CV of Principal Investigator and Co-PI
11. Permission letter from the Deputy Director of Panchayat (DDP)
12. 12.SRC Recommendation Letter

Revised submission

1. Checklist Form
2. Covering letter addressed to the Chairman, IEC, SCTIMST dated 10.01.2024
3. Responses /amendments made based on the Reviewer's comments
4. Copy of IEC Recommendation letter dated 10.01.2024
5. Responses /amendments made based on the Reviewer's comments
6. IEC Application Form
7. Declaration Form
8. Research Proposal
9. Participant Information Sheet in English and Malayalam
10. Informed Consent Form in English and Malayalam
11. Interview Schedule in English and Malayalam
12. CV of Principal Investigator and Co-PI
13. Permission letter from the Deputy Director of Panchayat (DDP)

IEC Decision
The IEC approved the conduct of the study in the present form.

Remarks:
The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent and asks to be provided a copy of the final report.

There was no member of the study team / Guide who participated in voting / decision making process. The ethics committee is organized and operated according to the requirements of Good Clinical Practice and the requirements of the Indian Council of Medical Research (ICMR).

Sincerely,

Dr. G. Srinivas
Member Secretary, IEC

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST, THIRUVANANTHAPURAM

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST
THIRUVANANTHAPURAM

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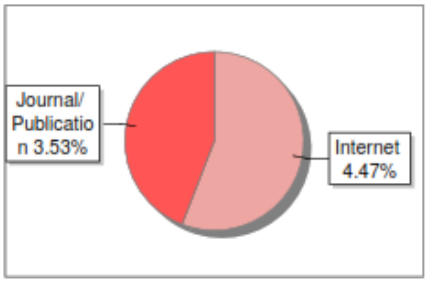

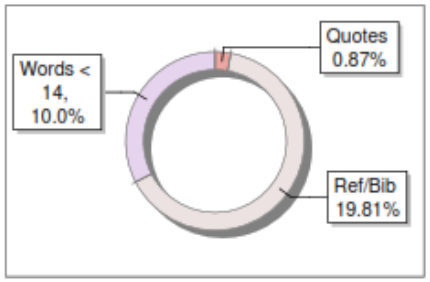

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